"Effectiveness of Comprehensive Intervention on Range of Motion, Muscle Strength and Health related Quality of Life among Post Mastectomy Patients."

Dissertation

Submitted to the Faculty of Nursing

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, BHOPAL

In a partial fulfillment of the requirement for the degree of

M.Sc. Nursing in Medical Surgical Nursing (Oncology Nursing)

By

Angita

Enrollment No: 2200053N07P67013

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July 2024

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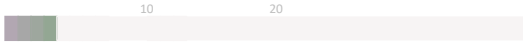

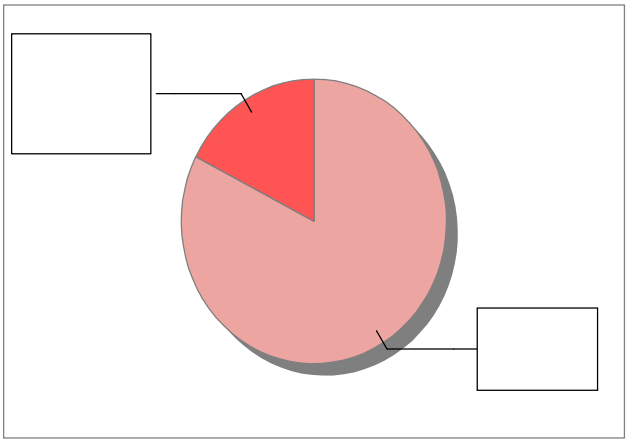

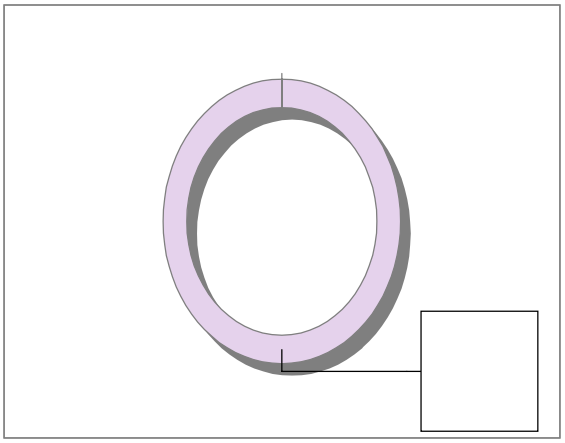

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Letter of Permission

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AIIMS, Bhopal Institutional Human Ethics Committee- Student Research (IHEC-SR) in its 7th meeting held on 22nd February 2023 discussed your proposal titled **"Effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients."** and evaluated it for suitability for your dissertation as required for fulfilment of MSc (Nursing).

Following members attended the meeting:

1. Prof. D. K. Pal, Former HoD Community Medicine, GMC, Bhopal……Chairperson
2. Prof. Rajnish Joshi, Professor of General Medicine, AIIMS, Bhopal……Member
3. Prof. Amit Agrawal, Professor of Neurosurgery, AIIMS, Bhopal……Member
4. Dr. Sunita Athawale, Professor of Anatomy, AIIMS, Bhopal……Member
5. Dr. Girish Bhatt, Addl. Professor of Paediatrics, AIIMS, Bhopal……Member
6. Dr. Ujjawal Khurana, Assoc. Professor of Pathology, AIIMS, Bhopal……Member
7. Dr. Ankur Joshi, Assoc. Professor of CFM, AIIMS, Bhopal……Member
8. Mr. Trivesh Goswami, Law Officer, AIIMS Bhopal,……Member
9. Dr. Shashank Purwar, Professor of Microbiology, AIIMS, Bhopal……Member Secretary

The decision of the committee is as follows:

The AIIMS, Bhopal IHEC-SR approves your research protocol. All research related activities must begin only after the date of this approval. The validity of this approval is till two years from the date of issuance. Please submit a closure report / renewal request before expiration of the validity for this approval.

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ABSTRACT

ABSTRACT

Introduction: Breast cancer is the most common cancer and the leading cause of death in women throughout the world. In a recent report of cancer statistics of India, 13.5 percent of breast cancer cases occur in women, among which most of the cases found in Chennai, Delhi and Bhopal state. Mastectomy is a common surgical approach for breast cancer, which can cause some post-operative complications like post operative pain, limited mobility of upper extremities, poor functional status and quality of life. These complications can be avoided with early rehabilitative intervention therefore present study was done to evaluate the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients.

Methods: Quasi experimental time series design was adopted for the study. 40 post mastectomy patients was conveniently recruited (Experimental n=20 and control group n=20). Comprehensive intervention was provided to experimental group participants from post operative day 2^{nd} and routine care to control group. Baseline assessment of range of motion, muscle strength and health related quality of life was done prior to the intervention. After giving the intervention range of motion, muscle strength was assessed on post operative day 5^{th} and day 14^{th}. After that on post operative day 30^{th} range of motion, muscle strength and health related quality of life using Functional Assessment of Cancer Therapy-Breast (FACT-B) was assessed.

Results: Significant improvement was found in range of motion ($p<0.05$) muscle strength ($p<0.05$) and health related quality of life ($p<0.05$) among post mastectomy patients of experimental group as compared to control group.

Conclusion: Comprehensive intervention is found to be effective in improving the range of motion, muscle strength and health related quality of life among post mastectomy patients. Early Rehabilitative interventions are beneficial in order to improve overall quality of life and preventing post operative complications of post mastectomy patients.

Keywords

Mastectomy, comprehensive intervention, health related quality of life, range of motion, muscle strength, post mastectomy patients

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12.	Letter requesting content validation
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22.	Certificate on muscle strength examination
23.	Certificate on rehabilitation after breast cancer
24.	Master data sheet

LIST OF ABBREVIATIONS

SI. NO.	ABBREVIATION	EXPANSION
1.	FACT-B	Functional assessment of cancer therapy-breast
2.	POD	Post operative day
3.	ROM	Range of motion
4.	BMI	Body mass index
5.	AIIMS	All India Institute of Medical Sciences
6.	CVI	Content validity index
7.	S-CVI	Scale content validity index
8.	LOP	Letter of permission
9.	IHEC-SR	Institutional Human ethical Committee-Student Research
10.	ANOVA	Analysis of variance
11.	WHO	World health organization
12.	SD	Standard deviation
13	IQR	Inter quartile range
14.	PWB	Physical wellbeing
15.	SWB	Social wellbeing
16.	EWB	Emotional wellbeing
17.	FWB	Functional wellbeing
18.	BCS	Breast cancer subscale
19.	HRQL	Health relate quality of life

LIST OF SYMBOLS

SI. NO.	SYMBOL	DEPICTION
1.	H	Hypothesis
2.	p	Level of significance
3.	N	Total population size
4	n	Population in group
5.	A	Type I error rate
6.	B	Type II error rate
7.	Z	Standard score
8.	%	Percentage
9.	*	Significance at the level of p value< 0.05

CHAPTER I
INTRODUCTION

CHAPTER 1

Introduction

Background of the study

According to WHO, breast cancer is the most commonly diagnosed cancer among women, with over 2.3 million new cases and 685,000 deaths in 2020 of breast cancer. In India a report published in 2018 had shown that 27.7% cases of breast cancer diagnosed in that year among all cancers detected among woman.[1] In a study it has been suggested that breast cancer burden will increase more than 3 million deaths per year by 2040. [2]A recent report of cancer statistics in India according to which 13.5 percent of breast cancer cases occur in women, among which most of the cases found in Chennai, Delhi and Bhopal city of India. [3]Breast cancer mortality changed to some extent from the 1930s through to the 1970s when surgery was the primary treatment. Improvements in survival began from 1990s when breast cancer early detection programmes were introduced which aids in effective medical therapies.[1]

Breast cancer survival rates rose and the disease's related mortality decreased as a result of early identification, new treatment developments, and a better knowledge of the disease's state. Breast cancer can be caused by a number of etiological and risk factors, such as hormone treatment, obesity, alcohol intake, radiation exposure, genetic alterations, DNA damage, and puberty.[4] In breast cancer usually no sign and symptom found among patients, or if any tumor is found that may be very small to be felt. So the abnormality can only be detected on mammogram. Associated symptoms along with the breast lump can be pain in the lump, nipple discharge, breast asymmetry and discoloration of breast.[5] Invasive ductal carcinoma accounts for 80% of all

breast carcinoma, which can be diagnosed by breast ultrasound, mammogram or detailed X-ray of breast and biopsies[6]. Breast cancer treatment depends upon the features of cancer. Several treatment options available which are surgical treatment, radiation therapy, chemotherapy, hormonal therapy and palliative therapy.[1] Mastectomy is a primarily performed surgical approach in breast cancer. According to an Indian study Post-operative complication of Mastectomy included shoulder stiffness, wound dehiscence, seroma, surgical site infection, hematoma, altered sensation and pain. [8] also muscular paralysis [9]. Due to all these complication patient quality of life has deteriorated which include all aspects like functional status, physical status, social status and psychological status.

Following breast surgery, a number of guidelines should be followed, including shoulder mobility, early rehabilitation techniques, psychological counseling, medication adherence, dressing the operated site with surgical asepsis, diet, and preventing complications. By implementing all of these guidelines, patients' post-mastectomy recovery times can be improved [10]. Exercise therapy in the post operative phase after mastectomy plays a vital role to prevent post operative complications and helpful in the early recovery of the patient. Therefore it is necessary to incorporate the Rehabilitative interventional modalities for patient after breast surgery to improve their overall quality of life.

Need of the study

The rate of complications after breast surgery ranges from 2% to 50%, which include infection, seroma, hematoma and bleeding[10]. Postoperatively appropriate and timely rehabilitation plays a vital role in the recovery from any of the type of breast surgery including breast conservative surgery, mastectomy, axillary lymph node dissection (ALND) and reconstruction[11]. Women

experiences physical and functional side effects as well as psychological impacts after breast surgery. Women perspectives after breast surgery include fatigue, pain, depression, disturbed body image and limited range of motion, which makes a huge impact on the quality of life[12]. Looking upon the problems after breast surgery, treatment should be multi factorial and based on assessment of symptoms followed by counseling, diet, exercise, occupational therapy, physical therapy, medication, incorporation of complementary system of medicine.[13]

Affected extremity dysfunction or restricted extremity movement is very much common after breast surgery, and pain arising from soft tissues and nerve injury is the main contributor in affected extremity dysfunction. [12] From the literature it has been found that pain relief should be the priority of treatment in early post mastectomy phase along with the movement of affected side extremity to ensure the better quality of life for patients with breast surgeries[14].

Several studies have been conducted to evaluate the effect of rehabilitative interventions for improving the functional wellbeing of the patient after breast surgery, and from those studies it has been proved that early interventional modalities are beneficial for rapid recovery of the patient following mastectomy[15]. Various studies are conducted on evaluating the exercise training at postoperative phase among patients with breast surgeries and those studies have showed significant results on improving the physical activity among patients. [16]. Various interventional modalities identified for the patients after breast surgeries for improving their overall quality of life that include Physical therapy – complex decongestive therapy, manual lymph drainage (MLD), standard physiotherapy, occupational therapy , Physical exercise – home

based and instructed exercise, Psychosocial – cognitive behavior therapy (CBT), psycho-education, Nutritional – change in dietary habits, dietary regime, Alternative therapies like yoga, music therapy, acupuncture, Complex – combined interventions- counseling and exercise[17].

As the burden of breast cancer and complication after surgery in the developing countries like India is very high. There is a need to incorporate multimodality interventional strategies for patients after breast surgery to prevent complications. However very few studies related to rehabilitation care after breast surgeries has been conducted in India and early rehabilitation after breast surgery can decrease the morbidity rate and help to prevent post operative complications. Therefore in the present study researcher has developed comprehensive rehabilitation intervention programme for patients after breast surgery, with the help of recent research evidences related to care after breast surgery so that an effective and efficient care can be provided to the patients for their early recovery.

Title of the study

Effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients

Research question

Is comprehensive intervention is effective in improving range of motion, muscle strength and quality of life among post mastectomy patients?

Objectives

1) To assess range of motion, muscle strength and health related quality of life among post mastectomy patients.
2) To evaluate effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients.
3) To find out the association between range of motion, muscle strength and health related quality of life among post mastectomy patients with selected socio demographic and clinical variables.

Hypothesis

H_0

There is no significant difference between level of range of motion, muscle strength and health related quality of life among post mastectomy patients who receive comprehensive intervention and who did not receive intervention.

H_1

There is a significant difference between level of range of motion, muscle strength and health related quality of life among post mastectomy patients who receive comprehensive intervention and who did not receive intervention.

OPERATIONAL DEFINITIONS

Effectiveness: It refers to the ability to be successful and produce the intended results. In the current study effectiveness refers to extent to which comprehensive intervention has achieved the desired results as measured by improvement in range of motion, muscle strength and health related quality of life.

Comprehensive intervention: In the present study comprehensive intervention comprises of multi component interventions that include supervised physical therapy, educational strategies and multimedia instructional package.

Supervised physical therapy:- In the current study supervised physical therapy refers to various post mastectomy exercises that include deep breathing, chest wall stretch, shoulder stretch, pendulum stretch, wand exercises, finger wall walk, inward and outward rotation.

Educational strategies: - Information booklet that include home management like exercise at home, diet, psychological health benefits, rest and sleep, meditation, promotion of self esteem and discharge teaching.

Multimedia instructional package: - It includes video-assisted demonstration on post mastectomy exercises.

Muscle strength: Refers to the amount of force a muscle can produce, in the present study muscle strength of same side extremity of surgical site assessed before and after intervention with the help of Medical Research Council muscle strength grading scale.

Range of motion (ROM): It refers to the full movement potential of a joint, in present study range of motion of same side extremity of surgical site was assessed before and after intervention with the help of medical Goniometer and recorded in self structured range of motion chart

Health related quality of life: In the present study it comprises of physical, emotional, social and functional wellbeing of participant which was assessed before and after intervention with the help of FACT-B (Functional Assessment of Cancer Therapy-Breast) 5 point Likert scale.

CONCEPTUAL FRAMEWORK

A conceptual framework is analytical tool with several variations and contexts. It can be applied in different categories of work where an overall picture is needed. It is used to make conceptual distinctions and organize ideas. Strong conceptual model capture something real and do this in such a way that it can be remembered and apply[18].

Conceptual framework for this study is based on Ernestine Wiedenbach's Perspective theory. The focus of the study is to find out the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients

HELPING ART OF CLINICAL NURSING THEORY: Wiedenbach proposes a prescriptive theory for nursing which is defined as conceiving of a desired situation and the way to attain it. It consists of three factors: central purpose, prescription, and realities. A nurse develops prescription based on a central purpose and implements it according to the realities of the situation.

CENTRAL PURPOSE: It refers to what nurse wants to accomplish. It is the overall goal towards which a nurse strives.

Central purpose for the present study is improving the range of motion, muscle strength and health related quality of life among post mastectomy patients.

PRESCRIPTION: It refers to the plan of care for the patient. It specifies the nature of action that will fulfill the central purpose.

In the present study comprehensive intervention is used to achieve the central purpose.

REALITIES: It refers to physical, physiological, emotional and spiritual factors. The five realities indentifies by Wiedenbach are agent, recipient, goal, means and framework [19].

- Agent- Practicing nurse
- Recipient- One who receives a nurse's action
- Goal- Nurse's desired outcome
- Means- Activities and device used by the nurse to achieve the goal
- Framework- Facility in which nurse is practicing.

Realities for this study are:-

- Agent- Researcher
- Recipient- Post mastectomy patients
- Goal- Improving the range of motion, muscle strength and health related quality of life
- Means- Comprehensive intervention
- Framework- All India Institute of Medical Sciences Bhopal

NURSING PRACTICE: Wiedenbach views nursing as an art based on goal directed care. Factual and speculative knowledge, judgment and skills are necessary for effective nursing practice. According to Wiedenbach, nursing practice consists of identifying a patient's need for help, ministering the needed help, validating that the need for help was met and coordinating the activities.

IDENTIFICATION: It involves viewing the patient as an individual with unique experience and understanding the patient's perception of condition. Determine the patient need for help based on the existence of a need whether the patient realize the need, what prevent the patient from meeting the needs and whether the patient cannot meet the need alone. In the present study researcher has done the pre intervention assessment at 2nd Post operative day (POD) of post mastectomy patients.

ADMINISTRATION: It refers to the provision of needed help, require an identified need and a patient who wants help.

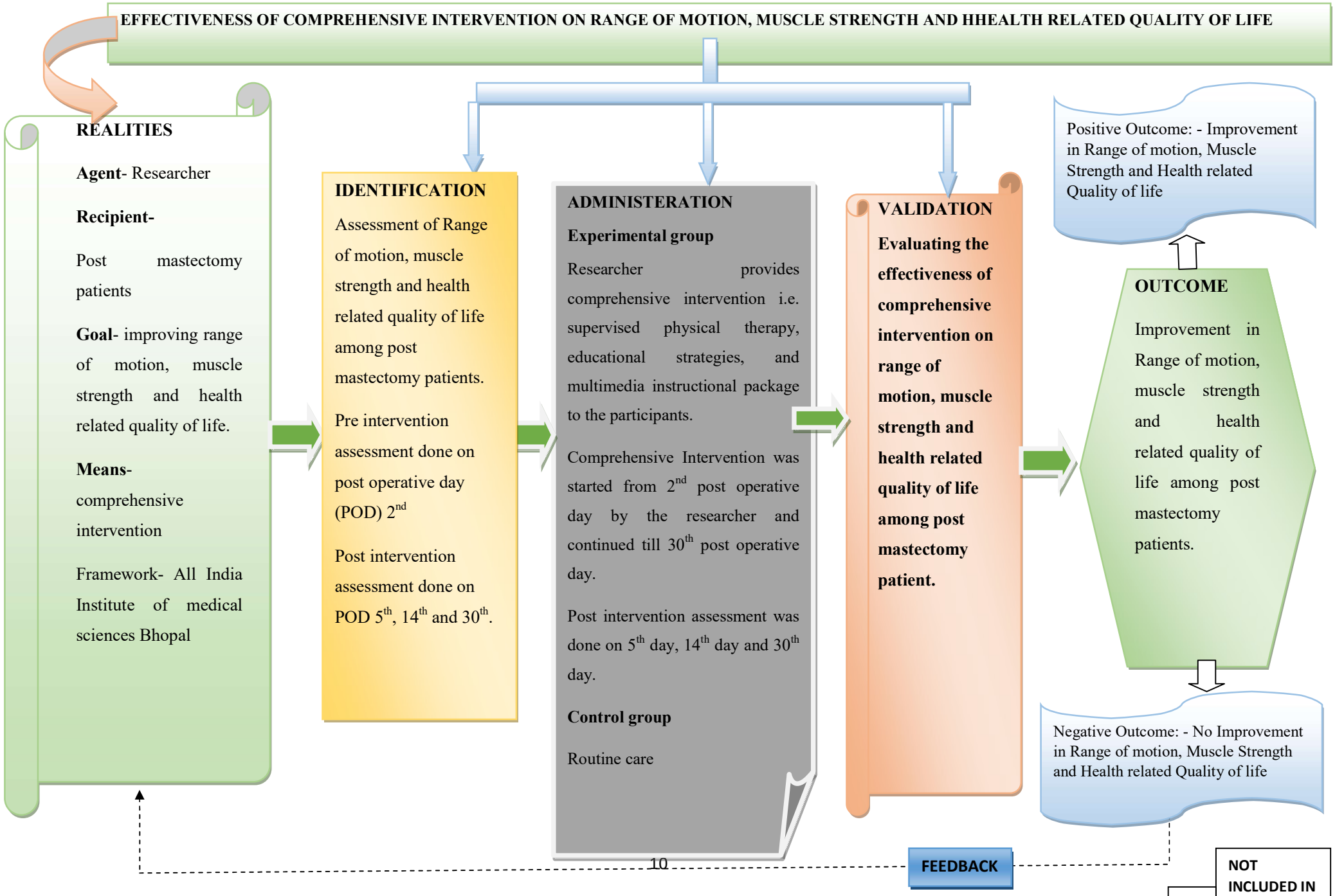
In the present study comprehensive intervention administered among participants.

VALIDATION: It refers to the collection of evidence that shows the patient needs have been met and functional ability has been restored as a direct result of the nurse action or not.

In the present study, it refers to the evaluation of outcome i.e. Positive outcome indicate in the improvement of range of motion, muscle strength and health related quality of life among post mastectomy patients.

Negative outcome indicate no improvement in of range of motion, muscle strength and health related quality of life among post mastectomy patients.

COORDENATION: It refers to reporting, consulting and conferring.


EFFECTIVENESS OF COMPREHENSIVE INTERVENTION ON RANGE OF MOTION, MUSCLE STRENGTH AND HHEALTH RELATED QUALITY OF LIFE
REALITIES
Agent- Researcher
Recipient-
Post mastectomy patients
Goal- improving range of motion, muscle strength and health related quality of life.
Means- comprehensive intervention
Framework- All India Institute of medical sciences Bhopal
IDENTIFICATION
Assessment of Range of motion, muscle strength and health related quality of life among post mastectomy patients.
Pre intervention assessment done on post operative day (POD) 2nd
Post intervention assessment done on POD 5th, 14th and 30th.
ADMINISTERATION
Experimental group
Researcher provides comprehensive intervention i.e. supervised physical therapy, educational strategies, and multimedia instructional package to the participants.
Comprehensive Intervention was started from 2nd post operative day by the researcher and continued till 30th post operative day.
Post intervention assessment was done on 5th day, 14th day and 30th day.
Control group
Routine care
VALIDATION
Evaluating the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patient.
OUTCOME
Improvement in Range of motion, muscle strength and health related quality of life among post mastectomy patients.
Positive Outcome: - Improvement in Range of motion, Muscle Strength and Health related Quality of life
Negative Outcome: - No Improvement in Range of motion, Muscle Strength and Health related Quality of life
FEEDBACK
NOT INCLUDED IN STUDY

CONCEPTUAL FRAMEWORK BASED ON MODIFIED WEIDENBACH'S HELPING ART OF CLINICAL NURSING THEORY (1990)

CHAPTER II

REVIEW OF LITERATURE

CHAPTER II
REVIEW OF LITERATURE

Review of literature is a body of test that aims to review the critical points of knowledge regarding particular topic of research.

A literature review helps to lay down the pillar for the study and also inspire new research ideas. Literature review provides a platform for understanding current knowledge on a topic and provides the significance for conducting a new study [19].

The search terms used for the literature review were mastectomy, post mastectomy complications, post mastectomy exercises, range of motion, muscle strength and health related quality of life.

The literature review for this study is presented under following subdivisions:

Section I: Literature review related to prevalence of post mastectomy complications

Section II: Literature review related to post mastectomy interventional studies

SECTION I: Literature review related to prevalence of post mastectomy complications

In 2023, a descriptive study was carried out to evaluate pain and related risk variables for postoperative discomfort following breast surgery over a six-month follow-up. After six months of breast surgery, 47.6% of patients reported clinically meaningful pain, with 8.9% of participants experiencing severe pain. On the second postoperative day following surgery, 74.6%

of patients reported clinically meaningful pain. Six months following surgery, there is a higher prevalence of pain due to the link between depression and increased acute pain and loneliness[20].

A prospective observational study was conducted to assess the incidence of chronic pain after breast surgery. Study was conducted in 307 patients undergone breast surgery. In the results it was shown that the incidence of chronic pain after breast surgery was 28% at 3 months of surgery among participants undergone breast surgery[21].

In order to determine the frequency and risk variables linked to breast cancer survivors' self-reported pain and other symptoms, a cross-sectional study was carried out. A study comprising 410 breast cancer survivors revealed that 74% of the patients felt persistent pain, with phantom feeling and parasthesia being mentioned as additional symptoms. The findings also demonstrated a link between breast cancer survivors' poor quality of life and persistent pain[22].

Preoperative physical activity and postoperative recovery in women undergoing breast surgery were examined in a prospective cohort study. Data was gathered via a questionnaire before, during, and after the procedure on 220 patients who were scheduled for breast surgery. Following data collection, 14% (31/220) of individuals reported being physically inactive prior to surgery, 61% (135/220) reported engaging in some mild physical activity (PA), and 20% (43/220) reported being more active (level 3+4). According to the results, patients who engage in more physical activity recover physically and mentally more quickly—85% more so than those who do not[23].

Section II: Literature review related to post mastectomy interventional studies

A meta-analysis and systematic review of randomized controlled trials were conducted to identify the best exercise regimens for various post-operative problems experienced by patients

with breast cancer. According to the findings, aerobic exercise helps to lessen pain, increase shoulder range of motion, strengthen muscles, and lower the risk of lymphedema development.[24].

The effectiveness of a 4-week nurse-led exercise rehabilitation program in enhancing the quality of life for breast cancer survivors undergoing breast reconstruction procedures was investigated in a randomized controlled research. Thirty patients were included in each group. Patients underwent a 4-week nurse-led exercise rehabilitation program; evaluation results revealed that the interventional group had a lower fatigue score and a higher quality of life score than the control group[25].

A comprehensive analysis of eighteen trials examining the impact of physical therapy interventions on quality of life and pain following mastectomy. When comparing the interventional group's members to the control group, they discovered that four exercise trials demonstrated a substantial impact of the intervention on the general and mental health components of quality of life. Six exercise studies, two myofascial trials, and two acupuncture trials were meta-analyzed, and the results significantly reduced pain in the experimental group compared to the control group[26].

A systematic review and Meta analysis to evaluate the effectiveness of Baduanjin exercise (traditional Chinese Qigong exercise) on quality of life among patients with breast cancer. Total 7 randomized controlled trials (RCTs) with 450 postoperative breast cancer patients with or without Baduanjin exercise were studied. In the results interventional group of Baduanjin exercise showed significant improvement in quality of life as compared with the control group[27].

A systematic review was done to determine the effect of yoga therapy on managing the lymphedema, improving the range of motion and quality of life among breast cancer survivors.

They screened 27 studies for full test reading and out of which seven studies included in final data collection, results all studies showed improvement in quality of life and shoulder mobility[28].

A study was conducted to evaluate the effects of progressive upper limb exercises and muscle relaxation training on upper limb functioning and quality of life among patients with breast surgery. 102 patients were randomly allocated in experimental and control group. Interventional group were provided progressive upper limb exercises and muscle relaxation training along with usual care. Post intervention evaluation done on 1, 3 and 6 month and interventional group showed improvement in upper limb function and health related quality of life as compared with control group[16].

In 2019 an experimental study was conducted to evaluate the effect of exercise training and follow up calls at home among on physical activity among mastectomy patients. Total sixty participants allocated randomly in interventional and control group. After 12 weeks post intervention evaluation done and results showed improvement in physical activity and health related quality of life among participants in interventional group as compared to control group[29].

A systematic review of RCTs done to evaluate the effectiveness of early rehabilitation on range of motion, muscle strength and arm function among women after breast surgery. Total twelve studies were evaluated, which shows that range of motion and strengthening exercises improve the shoulder flexion, abduction and external rotation after breast surgery[30].

An experimental study was conducted to investigate the effect of complex exercises on pain and shoulder range of motion among breast cancer patients having lymphedema. 69 participants included randomly, 35 participants in complex exercise group and 34 in conventional

decongestive therapy and study showed improvement in participants in group of complex exercises as compared with participants of conventional therapy[31].

An experimental study was conducted to determine the effect of exercise intervention on pain, shoulder movement and Functional status in women after breast surgery. Study was conducted in 60 participants, 30 in each experimental and control group. Exercise therapy given twice a day after surgery to experimental group and after 2 months pain, shoulder movement and Functional status was assessed, which showed significant improvement in all three variables after the intervention in experimental group participants[37].

The impact of post-mastectomy exercise on lymphedema and range of motion in patients who have had mastectomy was investigated in an interventional trial. Thirty individuals were chosen using purposive sampling, with fifteen in the experimental group and fifteen in the control group. Additionally, on the fifth postoperative day, a post interventional evaluation of range of motion and lymphedema was completed. The results showed a significant improvement in range of motion and a reduction in lymphedema [32].

A systematic review done to determine the effectiveness of exercise therapy in reducing the pain among breast cancer patients. Six articles analyzed to with respect to their efficacy in reducing shoulder pain among breast cancer patients. And results showed reduction in the shoulder pain among breast cancer patients after giving exercise therapy[33].

The usefulness of early physiotherapy in lowering the incidence of subsequent lymphedema following breast cancer surgery was assessed in an experimental trial. In all, 120 women took part in the research. The control group received standard treatment, while the interventional

group received a physiotherapy regimen. The incidence of lymphedema was much lower in the intervention group's participants than in the control group, according to the results [34].

A pilot study was done to evaluate the effectiveness of self-administered, home-based exercise (HBE) rehabilitation programme on range of motion among women after breast surgery. Study conducted on 27 participants 16 in interventional and 11 in control group. Results showed improved range of motion among the participants of interventional group[35].

An experimental study was carried out to assess the impact of a whole body resistance and training program on lymphedema, quality of life, and physical fitness in 27 breast cancer survivors. Following the intervention, there was a noticeable increase in quality of life, trunk flexibility, bilateral shoulder joint flexibility, and upper and lower body strength[36].

CHAPTER III
METHODOLOGY

Chapter III

Materials and methods

Research methodology is the systematic way of solving a research problem. It includes the general pattern for organizing the procedure for empirical study together with the method for obtaining valid and reliable data for research problem[18].

RESEARCH APPROACH: - Quantitative research approach was adopted in this study.

RESEARCH DESIGN: Quasi- Experimental time series research design was adopted in this study to evaluate the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients at different time points (Post operative day (POD) 2nd, 5th, 14th and 30th)

EXPERIMENTAL GROUP	Pre-Test on POD 2nd of Range of motion, Muscle strength and health related quality of life	Intervention	Post Test on 5th POD of Range of motion and Muscle strength	Post Test-14th POD of Range of motion and Muscle strength	Post Test on POD 30th of Range of motion, Muscle strength and health related quality of life
CONTROL GROUP	Pre-Test on POD 2nd of Range of motion, Muscle strength and health related	Routine Care	Post Test on 5th POD of Range of motion and Muscle	Post Test-14th POD of Range of motion and Muscle strength	Post Test on POD 30th of range of motion, muscle strength and health related

	quality of life		strength		quality of life.

STUDY VARIABLES

Independent variable

Comprehensive intervention

Dependent variable

- Range of motion
- Muscle strength
- Health related Quality of life

Socio-demographic and clinical variables

Age, marital status, Education, Occupation, Body mass index(BMI), Period of Illness, Type of Mastectomy, Adjuvant Therapy.

SETTING:

Study was conducted at Surgical Oncology ward of AIIMS Bhopal which is a tertiary care hospital offering multispecialty treatment. It has well separated oncology wards, surgical oncology ward is at 3rd floor of AIIMS Bhopal hospital, where cancer patients with need surgical therapy are admitted and from surgical oncology ward post mastectomy patients were enrolled as per the inclusion criteria.

POPULATION

Target population

The population was post mastectomy patients at AIIMS Bhopal.

Accessible population

Post mastectomy patients admitted in the department of Surgical Oncology at AIIMS Bhopal who were present at the time of data collection and gave consent to participate in the study.

Sample

Post mastectomy patients who fulfill the sampling criteria.

Sampling Criteria

Inclusion Criteria

- Post mastectomy female patients admitted at AIIMS Bhopal.
- Patients who were willing to participate.
- Patients present at the time of data collection.
- Patients with age more than 18 years.

Exclusion Criteria

- Patients with musculoskeletal problems of upper extremity.
- Patients with cognitive impairment who are not able to follow the commands.

Sampling technique and sample size calculation

Sampling technique adopted in this study was non probability convenient sampling technique, and for the calculation of sample size given formula was used:

$$n=2SD^2 \{Z (1-\alpha/2) + Z (1-\beta)\}^2/\mu d^2$$

Standard deviation (SD) 17.72 taken from previously done study[34].

Level of significance (Z) (1-α/2) = 1.96 chosen for the study

Power of the study (Z) 1-β at 80 % is 0.84

Clinical significance difference (μd) is 20 [18].

From the above given formula 12 samples calculated each in experimental and control group and for the present study researcher has taken 40 samples 20 in each control and experimental group.

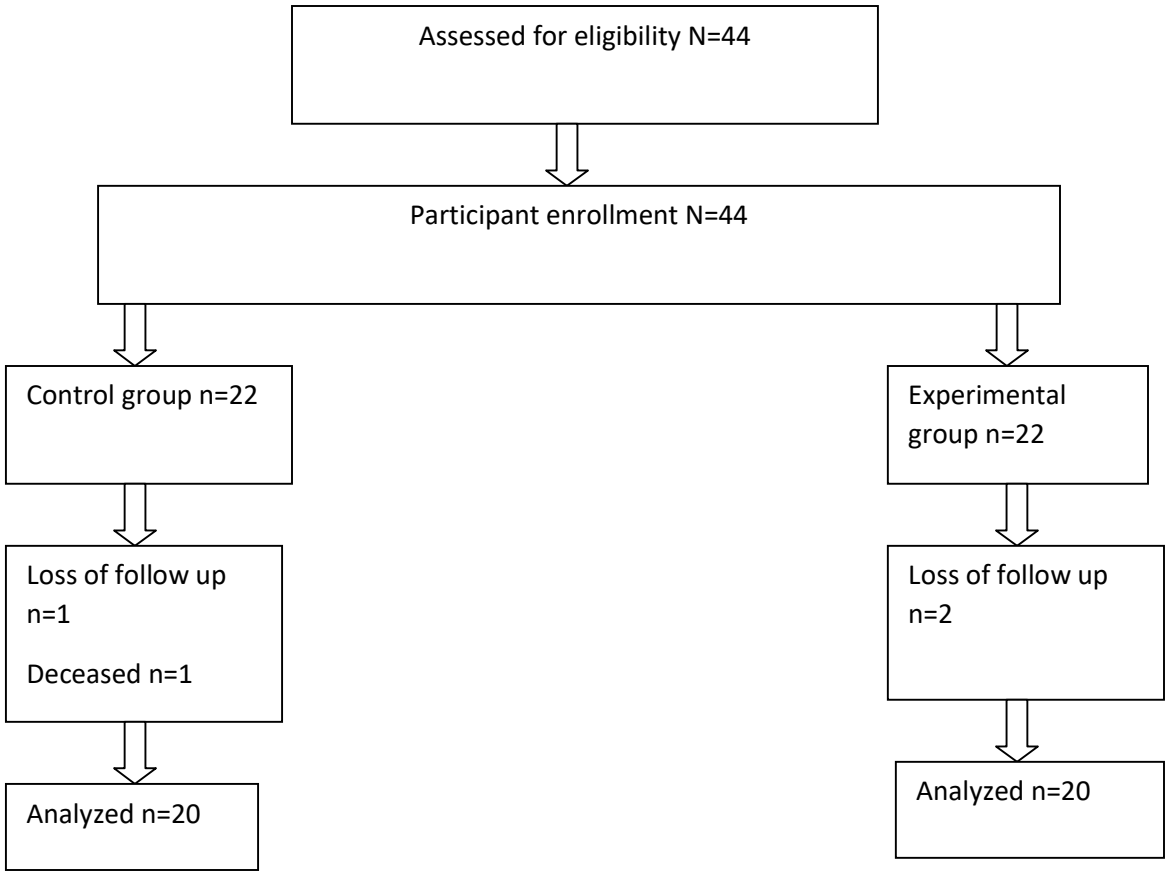


Figure2 Schematic representation of enrollment of subjects for study

DEVELOPMENT AND DESCRIPTION OF TOOL

In this study for the data collection four tools were used for distinguish purposes, which are mentioned below:

Questionnaire to assess the Socio-demographic and Clinical Variables (ANNEXURE 3 & 4)

It includes questions to assess the Socio-demographic and Clinical data of the participants. This section has 10 variables which include age, marital status, education, occupation, type of family, co-morbid illness, period of illness, BMI, type of mastectomy, adjuvant therapy.

Self structured range of motion chart to assess the shoulder range of motion (ANNEXURE 5)

Assessment chart for range of motion include various movement of shoulder joint of same side extremity of surgical site. It includes 6 items which are horizontal adduction, horizontal abduction, forward flexion, forward extension, inward rotation, outward rotation. According to the participant assessment finding score was given : 1 to expected range of motion and 0 to poor range of motion and then total score of all items was calculated.

Scale to assess the muscle strength (ANNEXURE 6)

For the assessment of muscle strength of same side extremity of surgical site standardized Medical research council muscle strength grading scale was used.

The most commonly accepted method of evaluating muscle strength is the Medical Research Council Manual Muscle Testing scale. This method involves testing key muscles from the upper and lower extremities against the examiner's resistance and grading the patient's strength on a 0 to 5 scale accordingly:

- 0 No muscle activation
- 1 Trace muscle activation, such as a twitch, without achieving full range of motion
- 2 Muscle activation with gravity eliminated, achieving full range of motion
- 3 Muscle activation against gravity, full range of motion
- 4 Muscle activation against some resistance, full range of motion
- 5 Muscle activation against examiner's full resistance, full range of motion

Questionnaire to assess the health related quality of life (ANNEXURE 7 & 8)

For the assessment of health related quality of Functional Assessment of Cancer Therapy-Breast (FACT-B) 5 point Likert scale was used[35].

The Functional Assessment of Cancer Therapy - Breast (FACT-B) is a 37-item instrument designed to measure five domains of health related quality of life (HRQOL) in breast cancer patients: Physical, social, emotional, functional well-being as well as a breast-cancer subscale (BCS). Higher the score better health related quality of life was interpreted. **(ANNEXURE 10)**

Technique of data collection

For the assessment of socio-demographic and clinical data and for the assessment of health related quality of life with FACT-B (Functional Assessment of Cancer Therapy-Breast) 5 point Likert scale interview method was used.

For the assessment of range of motion and muscle strength of same side extremity of surgical site physical examination was done.

Validity and Reliability of the tool

Content validity- The following steps was taken for content validation.

- Prepared content validation form. **(ANNEXURE 12)**
- Selected a review panel of experts**.(ANNEXURE 11)**
- Conducted content validation by experts.
- Reviewed domain and items.
- Provided score on each item.
- Calculated content validity index, and the calculated validity index was found to acceptable.

S-CVI score was calculated of socio-demographic and clinical data which was 0.94 and S-CVI score for Self structured range of motion chart was 0.8.

RELIABILITY OF THE TOOL

The reliability of self structured range of motion chart was calculated from inter-rater reliability method and calculated percentage agreement was found to be 0.8. Reliability for MRC muscle strength grading scale and Functional

assessment of cancer therapy-Breast i.e. Fact-B has already been established, and the reliability values are given below:

Reliability value for Medical research council muscle strength grading scale

r =0.78[36].

Reliability value for FACT-B (Functional Assessment of Cancer Therapy-Breast) is

r = 0.70 [37].

Translation of the tool

Socio-demographic and clinical data sheet was validated from English and Hindi language experts, language consistency was assessed by translation and retranslation method. (ANNEXURE16 & 17)

For FACT-B (Functional Assessment of Cancer Therapy-Breast) Hindi version of the tool was obtained. (ANNEXURE 24)

Description of Intervention

The intervention was developed by the researcher under the guidance of Guide and Co-Guide. It was prepared after considering physical, psychological, functional and overall needs of the patients after mastectomy, and to help the patients in their early recovery after mastectomy.

In the present study comprehensive intervention include following components:

Supervised physical therapy: Post mastectomy exercises started from post operative day 2nd among patients, firstly demonstration on post mastectomy

exercises given by the researcher to patients, after that assisted and supervised physical therapy on post mastectomy exercises provided to the patients. This physical therapy session continued twice a day for 15 to 20 minutes till 5th post operative day or discharge of the patients.

Educational Strategies: It includes an information booklet on care after mastectomy and discharge teaching.

Information Booklet: An information booklet was provided to the participants of experimental group, it consist of 20 pages, developed by the researcher and provided to the patients on discharge. Firstly literature review was done and booklet was revised based on the feedback or view points of internal committee members. (From Department of College of Nursing, Surgical Oncology, Physical Medicine and Rehabilitation). The booklet was sent for validation to various external experts from the concerned departments across India. Based on the feedback modifications were done and further the booklet was translated into Hindi language and language validation was done. Finally the conceptualized booklet was then provided to the experimental group. (ANNEXURE 21)

The Information booklet covers the range of topics that include a brief introduction about mastectomy, instruction for home care after mastectomy-wound care, pain relief and other medicines, diet, activity, rest and sleep, psychosocial intervention, rehabilitative interventions , physical therapy and when to reach to health care setting. [38, 39].

Discharge Teaching: On discharge patients were educated to follow the schedule of physical therapy and every topic written in the information booklet discussed with the patient in detail during discharge. Telephonically reminder or feedback was taken from the patients.

Multimedia instructional package: It consists of a video prepared by researcher on the post mastectomy exercises and it was shared with the patients on discharge to help them doing the exercises at home. The content of the video was validated from the experts from the Department of College of Nursing, Surgical Oncology, Physical Medicine and Rehabilitation across India. Based on the feedback modifications were done and finally the video was shared with the participants of experimental group.

Adherence checklist: On discharge, an adherence checklist was given to the participants of interventional group and that adherence checklist was collected from them on follow up visit to know the participant level of intervention adherence at home. Average adherence level of experimental group participantswas found to be 85%.

Telephonically follow up: Weekly telephonically follow up was taken from the participants of interventional group, to ensure the compliance towards the intervention. Pilot study conducted after the development of study intervention. The main aim of pilot study was to test the Intervention feasibility and acceptability among participants (post mastectomy patients).

ETHICAL CONSIDERATION:

- Approval was be taken from the IHEC-SR committee of the institution, letter of permission received on 28/02/23 with Ref No AIIMS/BPL/IHEC/July/22/MscN/13 (ANNEXURE 1)
- Permission was taken from the hospital authority before the data collection. (ANNEXURE 2)
- Written informed consent was taken from individual subject. (ANNEXURE 20)
- Confidentiality of the information was maintained by providing codes to each subject.

PILOT STUDY

To assess the feasibility of the study and the acceptance of the intervention pilot study was conducted before the main study and that was done on 6 participants after development of the tool from 20-06-23 to 30-07-23 in the department of Surgical Oncology of AIIMS Bhopal.

Convenient sampling technique was used and those samples are taken who met the inclusion criteria. Before the initiation of data collection self introduction was given to each participants and information sheet was given to them. After that consent was taken from the participants. Baseline assessment of range of motion, muscle strength and health related quality of life was done on 2^{nd} post operative day (POD). From 2^{nd} POD comprehensive intervention was started among experimental group and no intervention for the control group. After that post intervention assessment of range of motion and muscle strength was done on POD 5^{th} and 14^{th}. Further post intervention evaluation done on POD 30^{th} of range of motion, muscle strength and health related quality of life.

Procedure of data collection

After the feasibility testing of the intervention data collection for main study was done from the month August 2023 to December 2024. Data was collected through following steps:

- Screening was done to before enrollment of the subject by considering inclusion and exclusion criteria with the help of screening tool.**(ANNXURE 8)**
- Intervention was started from 2nd Post operative day (POD) of the participants.
- On 2nd post operative day pre intervention assessment of range of motion, muscle strength and health related quality of life was done among the participants of both experimental and control group.
- After pre intervention assessment supervised physical therapy by the investigator, started among participants of experimental group and standard care to the participants of control group.
- Under supervised physical therapy firstly demonstration on post mastectomy exercises by the investigator given to the participants of experimental group after that assistance was be provided if required in doing physical therapy to the participants of experimental group.
- From 2nd post operative day till 5th post operative day twicely 20 minute session of supervised physical therapy was provided by the investigator to the participants of experimental group.
- On 5th post operative day or discharge day post intervention assessment of range of motion and muscle strength was done along with that

information booklet on home care after mastectomy, discharge teaching and video on post mastectomy exercises at home were provided to the participants of experimental group.

- On 14th post operative day post intervention assessment of range of motion and muscle strength was done in the participants of experimental group.
- On 30th post operative day post intervention assessment of range of motion, muscle strength and health related quality of life was done in the participants of experimental group.
- Similarly for the participants of control group baseline range of motion, muscle strength and health related quality of life was assessed on POD 2nd.
- After that assessment of range of motion and muscle strength was done on POD 5th and 14th.
- Further on POD 30th assessment of range of motion, muscle strength and health related quality of life was done.

PLAN FOR DATA ANALYSIS:

- Analysis and Interpretation of data was done according to the objectives by using descriptive and inferential statistics.
- Fisher's exact test and Chi square was used for homogeneity testing between the experimental and control group.
- Shapiro Wilk test was used to check the normality of the data before the application of statistical test.

- Frequency and percentage distribution was used to analyzed the description of socio demographic and clinical characteristics of study participants.
- Repeated measure two way ANOVA was used to analyzed the comparison of range of motion, muscle strength and health related quality of life between two group and within the group.
- Non parametric Kruskal wallis H test and Mann whitney U test was used to analyze the association of range of motion with selected socio demographic and clinical variables.
- Parametric Independent t test and one way ANOVA was used to analyze the association of health related quality of life with selected socio demographic and clinical variables.

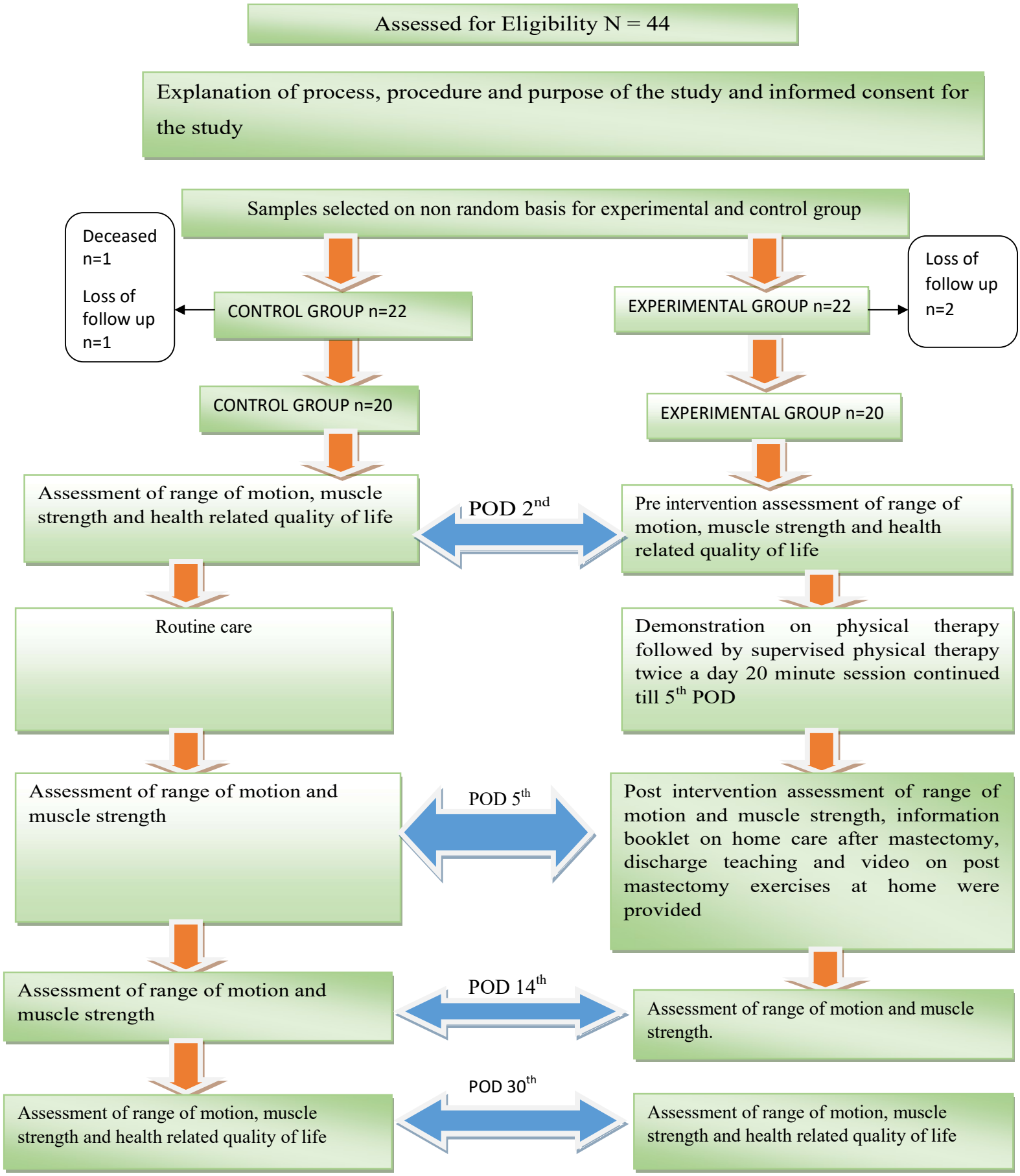

Assessed for Eligibility N = 44
Explanation of process, procedure and purpose of the study and informed consent for the study
Samples selected on non random basis for experimental and control group
Deceased n=1
Loss of follow up n=1
CONTROL GROUP n=22
EXPERIMENTAL GROUP n=22
Loss of follow up n=2
CONTROL GROUP n=20
EXPERIMENTAL GROUP n=20
Assessment of range of motion, muscle strength and health related quality of life
POD 2nd
Pre intervention assessment of range of motion, muscle strength and health related quality of life
Routine care
Demonstration on physical therapy followed by supervised physical therapy twice a day 20 minute session continued till 5th POD
Assessment of range of motion and muscle strength
POD 5th
Post intervention assessment of range of motion and muscle strength, information booklet on home care after mastectomy, discharge teaching and video on post mastectomy exercises at home were provided
Assessment of range of motion and muscle strength
POD 14th
Assessment of range of motion and muscle strength.
POD 30th
Assessment of range of motion, muscle strength and health related quality of life
Assessment of range of motion, muscle strength and health related quality of life

Figure 3 Process of data collection

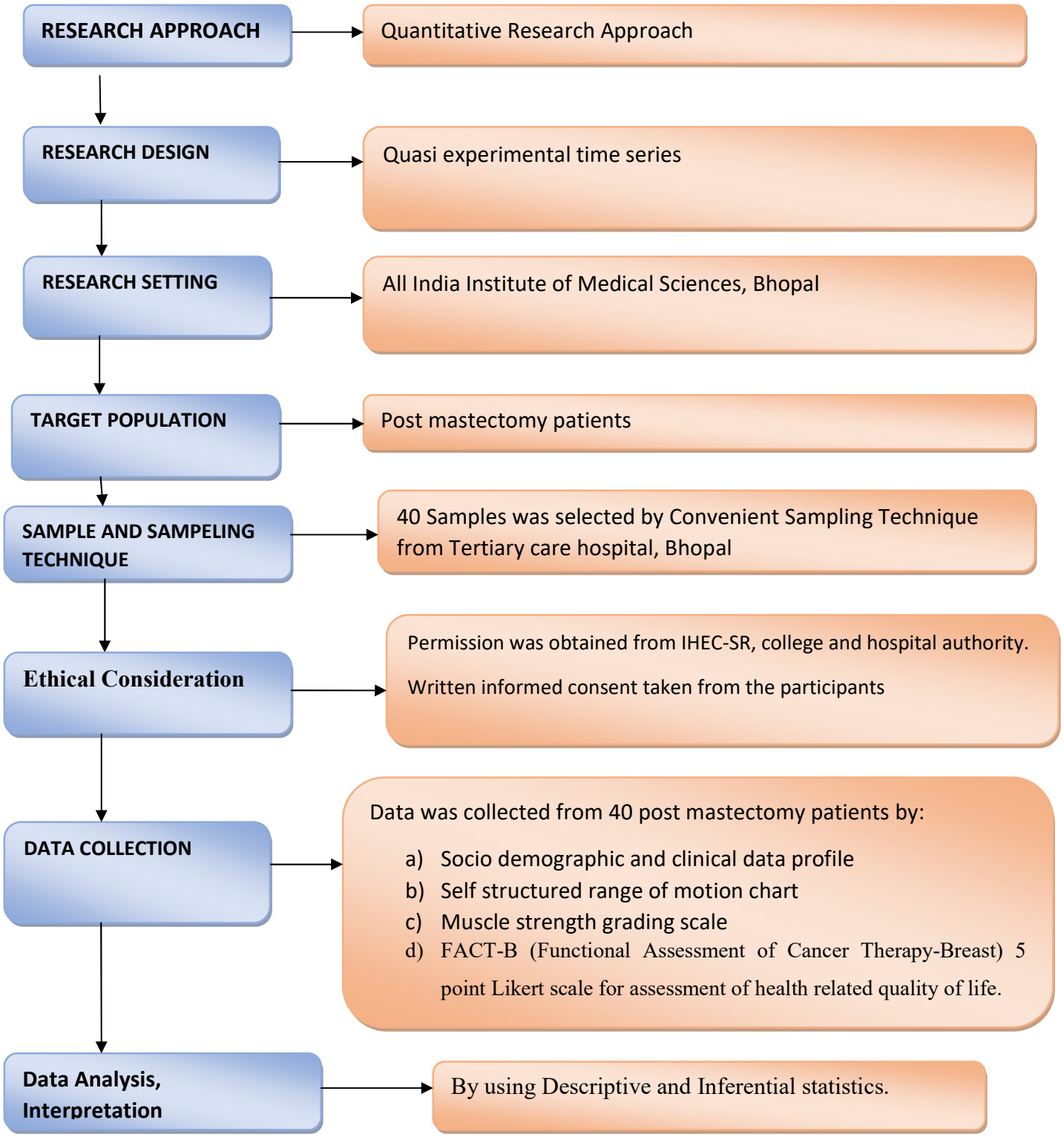

RESEARCH APPROACH
Quantitative Research Approach
RESEARCH DESIGN
Quasi experimental time series
RESEARCH SETTING
All India Institute of Medical Sciences, Bhopal
TARGET POPULATION
Post mastectomy patients
SAMPLE AND SAMPELING TECHNIQUE
40 Samples was selected by Convenient Sampling Technique from Tertiary care hospital, Bhopal
Ethical Consideration
Permission was obtained from IHEC-SR, college and hospital authority.
Written informed consent taken from the participants
DATA COLLECTION
Data was collected from 40 post mastectomy patients by:
a) Socio demographic and clinical data profile
b) Self structured range of motion chart
c) Muscle strength grading scale
d) FACT-B (Functional Assessment of Cancer Therapy-Breast) 5 point Likert scale for assessment of health related quality of life.
Data Analysis, Interpretation
By using Descriptive and Inferential statistics.

Figure 4 SCHEMATIC REPRESENTATION OF METHODOLOGY

CHAPTER IV

RESULT

CHAPTER IV

RESULTS

This chapter contains analysis and interpretation of data collected to evaluate the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients. It is one of the most important part of research where the collected data is systematically analyzed and interpreted with the study objectives thereby enabling to deduct meaningful inferences, trends and patterns of relationships between study variables and to prove or disprove hypothesis. The data collected was tabulated, analyzed and interpreted based on objectives by using descriptive and inferential statistics. Statistical analysis was carried out by using software IBM SPSS ver. 16.

The finding are presented in tables under following heading

Section I: Description of socio-demographic and clinical characteristics of post mastectomy patients and testing of homogeneity.

Section II: Effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients.

Section III: Association between range of motion, muscle strength and health related quality of life with selected socio-demographic and clinical variables.

Section I: Description of socio-demographic and Clinical characteristics of post mastectomy patients and testing of homogeneity

Table 1 Socio-demographic and Clinical characteristics of study participants and testing of homogeneity N=40

Variables	Group					p-value
		Experimental		Control		
		N	%	N	%	
age# (in years)	18-30	2	10	0	0	0.67
	30.1- 40	5	25	6	30	
	40.1- 50	5	25	7	35	
	>50.1	8	40	7	35	
Marital status #	Married	1	5	0	0	1.00
	Unmarried	18	90	19	95	
	Widow	1	5	1	5	
Education status#	Illiterate	0	0	2	10	0.007*
	Primary school	2	10	3	15	
	Middle school	7	35	3	15	
	High school	5	25	8	40	
	Graduate	0	0	4	20	
	Post graduate	6	30	0	0	
Occupation#	Unemployed	14	70	16	80	0.73
	Unskilled work	0	0	1	5	
	Semiskilled work	1	5	1	5	
	Skilled work	0	0	1	5	
	Clerical/farmer	1	5	0	0	
	Semiprofessional	1	5	0	0	
	professional	3	15	1	5	

Cont….

Table 1 Socio-demographic and Clinical characteristics of study participants and testing of homogeneity N=40

family type##	Nuclear	5	25	7	35	0.49
	Joint	15	75	13	65	
Co morbid illness##	Absent	14	70	11	55	0.33
	Present	6	30	9	45	
HTN##	Absent	17	85	12	60	0.08
	Present	3	15	8	40	
DM##	Absent	19	95	17	85	0.61
	Present	1	5	3	15	
Asthma #	Absent	18	90	20	100	0.49
	Present	2	10	0	0	
Thyroid#	Absent	16	80	20	100	0.11
	Present	4	20	0	0	
Other#	Absent	20	100	19	95	1.00
	Present	0	0	1	5	
period of illness#	< 6 months	6	30	8	40	0.54
	6 months – 1 year	11	55	7	35	
	>1 year	3	15	5	25	
BMI#	Underweight	2	10	0	0	0.06
	Normal	6	30	11	55	
	Overweight	10	50	4	20	
	Obesity	2	10	5	25	
Type of mastectomy #	Modified radical mastectomy	15	75	18	90	0.41
	Breast conservative surgery	5	25	2	10	
adjuvant therapy##	Absent	11	55	14	70	0.33
	Present	9	45	6	30	

#Fisher's exact test

Chi-square test

*statistically significant at the level of p-value <0.05

RESULTS

In table 1 all the categorical variables are summarized using frequency and percentages. Chi square and fisher's exact test was used for the homogeneity testing, experimental and control group was found to be homogenous with respect to all variables except for educational status (p value 0.007) as p value more than 0.05.

Section II: Effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients.

H_0

There is no significant difference between level of range of motion, muscle strength and health related quality of life among post mastectomy patients who receive comprehensive intervention and who did not receive intervention.

Table2 Comparison of the trend in the range of motion before and after intervention across study groups

N=40

Parameters	Group	**Sample size (n)**	**Time period**				**Within groups Comparison F value (p value)**	**Interaction F-value (p-value)**
			Pre intervention POD 2nd **Mean±SD**	POD 5th day **Mean±SD**	POD 14th day **Mean±SD**	POD 30th day **Mean±SD**		
ROM	Experimental	20	0.35±0.49	2.70±0.80	5.00±0.92	5.95±0.22	332.58 (<0.001)*	**26.37 (<0.001)***
	Control	20	0.45±0.51	1.50±0.61	2.95±0.89	3.85±0.99	119.25 (<0.001)*	

F value- Repeated measure two way ANOVA value

*statistically significant at the level of p-value <0.05

ROM- range of motion

SD- standard deviation

Table 2 represents the comparison of range of motion in experimental and control group. While comparing range of motion between experimental and control group statistically significant improvement was seen in experimental group as compared to control group after administration of comprehensive intervention as p value is <0.001. Comparison within group shows statistical significant difference in experimental group. So, within group pair wise comparison of range of motion in experimental and control group shown in Table 3 and Table 4.

Table 3 Pair wise comparison of range of motion within experimental group

n=20

Group	TIME	TIME	Mean Difference (I-J)	pvalue
Experimental group	ROM POD 2nd	ROM POD 5th	-2.350	<0.001*
		ROM POD 14th	-4.650	<0.001*
		ROM POD 30th	-5.600	<0.001*
	ROM POD 5th	ROM POD 14th	-2.300	<0.001*
		ROM POD 30th	-3.250	<0.001*
	ROM POD 14th	ROM POD 30th	-.950	<0.001*

*statistically significant at the level of p-value <0.05

ROM- range of motion

Table 3 represents pair wise comparison of range of motion using post hoc bonferonni within experimental group, which shows a progressive improvement in range of motion was noted after the administration of comprehensive intervention from POD 2nd to POD 30th as p value is < 0.001.

Table 4 **Pair wise comparison of range of motion within Control group**

n=20

Group	TIME(I)	TIME(J)	Mean Difference (I-J)	Pvalue
Control group	ROM POD 2nd	ROM POD 5th	-1.050	<0.001*
		ROM POD 14th	-2.500	<0.001*
		ROM POD 30th	-3.400	<0.001*
	ROM POD 5th	ROM POD 14th	-1.450	<0.001*
		ROM POD 30th	-2.350	<0.001*
	ROM POD 14th	ROM POD 30th	-.900	.001*

*statistically significant at the level of p-value <0.05

ROM- range of motion

Table 4 represents pair wise comparison of range of motion using post hoc bonferonni within control group, which shows a progressive improvement in range of motion was noted from POD 2nd to POD 30th. But the improvement was significantly higher in the experimental group as compared to control group as intervention p value<0.001. (as depicted in Table 2).

N=40

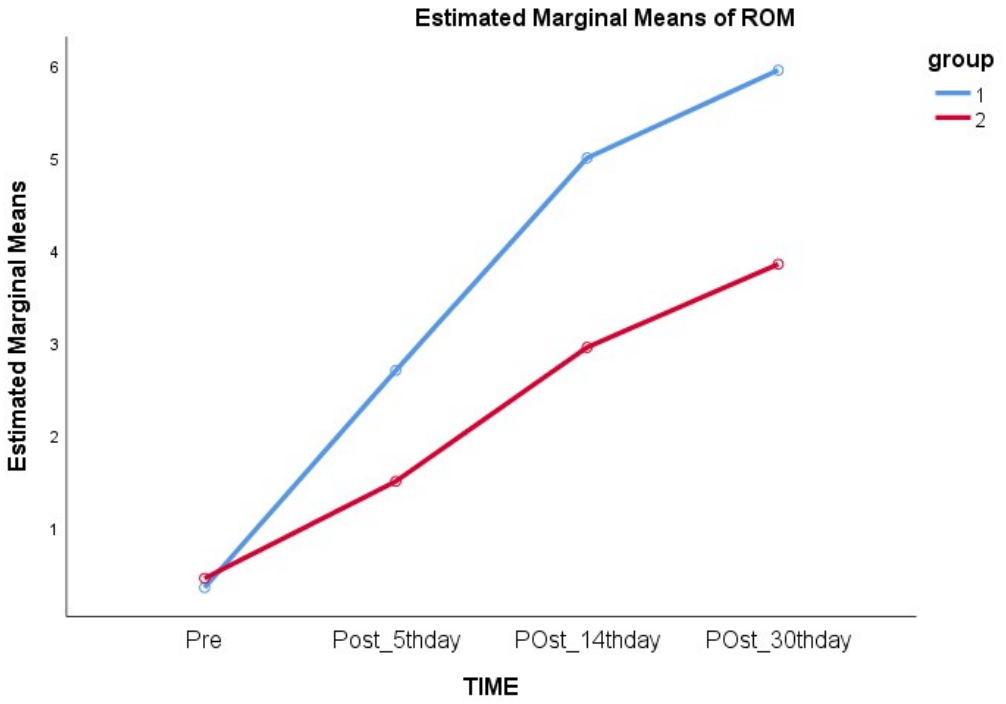


Fig 5. Profile plot showing the change in the range of motion (ROM) over time across study groups

Figure 5 is representing the estimated marginal mean of range of motion with time in both experimental and control group, which shows that the estimated marginal mean of range of motion in experimental group is more than control group at every time point i.e. 5^{th}, 14^{th} and 30^{th} day observation.

Table 5 Comparison of the trend in the muscle strength over the period of time across study groups

N=40

Parameters	Group	**Sample size (n)**	**Time period**				**Within groups Comparison F value (p value)**	**Interaction F-value (p-value)**
			Pre intervention POD 2nd **Mean±SD**	POD5th day **Mean±SD**	POD 14th day **Mean±SD**	POD 30th day **Mean±SD**		
Muscle strength	Experimental	20	3.00±0	4.05±0.22	4.80±0.41	5.00±0.0	470.57 (<0.001)*	8.25 (<0.001)*
	Control	20	3.00±0	3.65±0.49	4.20±0.41	4.85±0.37	355.85 (<0.001)*	

F value- Repeated measure two way ANOVA value

*statistically significant at the level of p-value <0.05

SD- Standard deviation

Table 5 represents the comparison of muscle strength in experimental and control group. While comparing muscle strength between experimental and control group statistically significant improvement was seen in experimental group as compared to control group after administration of comprehensive intervention as p value is <0.001. Within group pair wise comparison of muscle strength in experimental and control group has been done which is shown in Table 6 and Table 7.

Table 6 Pair wise comparison of muscle strength within experimental group

n=20

Group	**TIME(I)**	**TIME(J)**	**Mean Difference (I-J)**	**Pvalue**
Experimental group	POD 2nd	POD 5th	-1.050*	<0.001*
		POD 14th	-1.800*	<0.001*
		POD 30th	-2.000*	<0.001*
	POD 5th	POD 14th	-.750*	<0.001*
		POD 30th	-.950*	<0.001*
	POD 14th	POD 30th	-.200	.329
*statistically significant at the level of p-value <0.05				

Table 6 represents pair wise comparison of muscle strength using post hoc bonferonni within experimental group, which shows a progressive improvement in muscle strength from POD 2nd to POD 14th which was found to be statistically significant (p <0.001). Mean value of muscle strength in experimental group increased from POD 14th to POD 30th, but it was not statistically significant shown in table 5.

Table 7

Pair wise comparison of muscle strength within Control group

n=20

Group	TIME(I)	TIME(J)	Mean Difference (I-J)	p value
Control group	POD 2nd	POD 5th	-.650	<0.001*
		POD 14th	-1.200	<0.001*
		POD 30th	-1.850	<0.001*
	POD 5th	POD 14th	-.550	<0.001*
		POD 30th	-1.200	<0.001*
	POD 14th	POD 30th	-.650	<0.001*

*statistically significant at the level of p-value <0.05

Table 7 represents pair wise comparison of muscle strength using post hoc bonferonni within control group, which shows a progressive improvement in muscle strength was noted from POD 2nd to POD 30th. But the improvement was significantly higher in the experimental group as compared to control as the mean value is higher in experimental group as compared to control group shown in table 5.

N=40

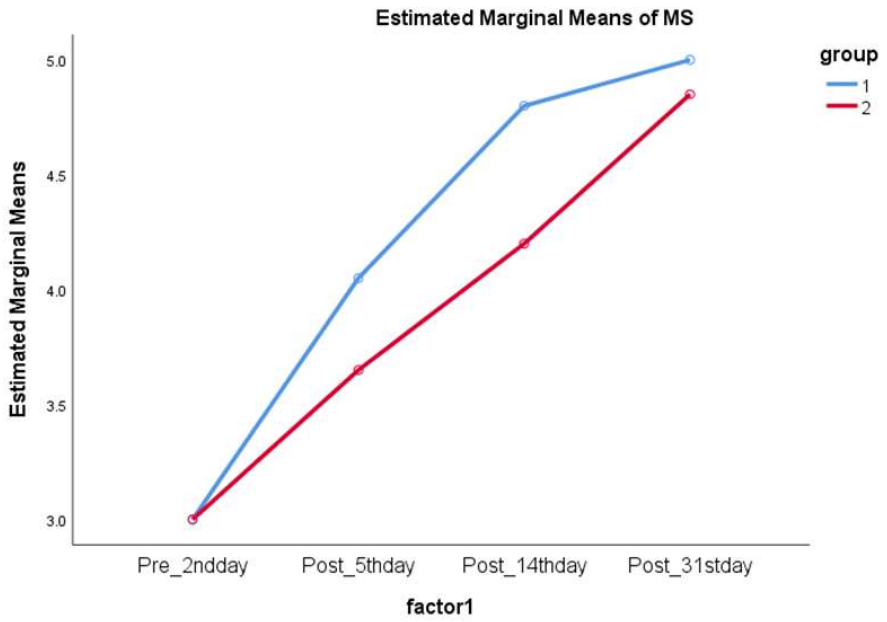


Fig 6. Profile plot showing the change in the muscle strength over time across study groups

Figure 6 is representing the estimated marginal mean of muscle strength with time in both experimental and control group, which shows that the estimated marginal mean of muscle strength in experimental group is more than control group at every time point i.e. 5^{th}, 14^{th} and 30^{th} day observation.

Table 8 Comparison of the trend in the health related quality of life with domains before and after intervention across study groups N=40

Parameters	Group	Sample size (n)	Time period		Within groups Comparison F value (p value)	Interaction F-value (p-value)
			Pre intervention POD 2nd **Mean±SD**	Post intervention POD 30th day **Mean±SD**		
PWB	Experimental	20	17.30(2.96)	19.95(2.74)	15.56(<0.001)*	25.52 (<0.001)*
	Control	20	18.75(3.95)	16.60(3.41)	10.24(0.003)*	
SWB	Experimental	20	16.55(2.76)	18.10(2.57)	14.88(<0.001)*	5.23(0.03)*
	Control	20	15.20(2.31)	15.45(2.28)	0.39(0.54)	
EWB	Experimental	20	19.35(2.35)	20.20(2.12)	2.75(0.11)	9.65(0.004)*
	Control	20	19.05(1.70)	17.65(2.50)	7.47(0.009)*	
FWB	Experimental	20	13.85(3.53)	15.45(2.42)	6.12(0.02)*	7.78(0.008)*
	Control	20	13.10(2.88)	12.15(2.54)	2.16(0.15)	
BCS	Experimental	20	28.00(3.12)	28.85(3.62)	2.01(0.17)	4.50(0.04)*
	Control	20	28.75(3.84)	27.80(3.68)	0.94(0.12)	
HRQL	Experimental	20	93.85±8.91	102.35±9.61	13.25(0.001)*	18.75(<0.001)*
	Control	20	95.60±9.81	89.80±9.86	6.17(0.02)*	

PWB- Physical wellbeing

SWB-Social wellbeing

EWB-Emotional wellbeing

FWB-Functional wellbeing

BCS-Breast cancer subscale

HRQL- Health related quality of life

F value- Repeated measure two way ANOVA value

*statistically significant at the level of p-value <0.05

SD- standard deviation

Table 8 represents the comparison of health related quality of life with domains in experimental and control group. Comprehensive intervention was found to be effective in improving the health related quality of life in experimental group as compared to control group as the p value is <0.001.However in control group decrease in the mean health related quality of life was found from POD2nd to POD 30th i.e. Mean±SD value is 95.60±9.81 and 89.80±9.86 on POD 2nd and POD 30th respectively. In domain wise comparison between two groups, improvement was seen in physical wellbeing (p<0.001), social wellbeing(p value 0.03), emotional wellbeing (p value 0.004) and functional wellbeing (p 0.008), breast cancer subscale (p value0.04) and in overall health related quality of life (p <0.001) among the participants of experimental group.

N=40

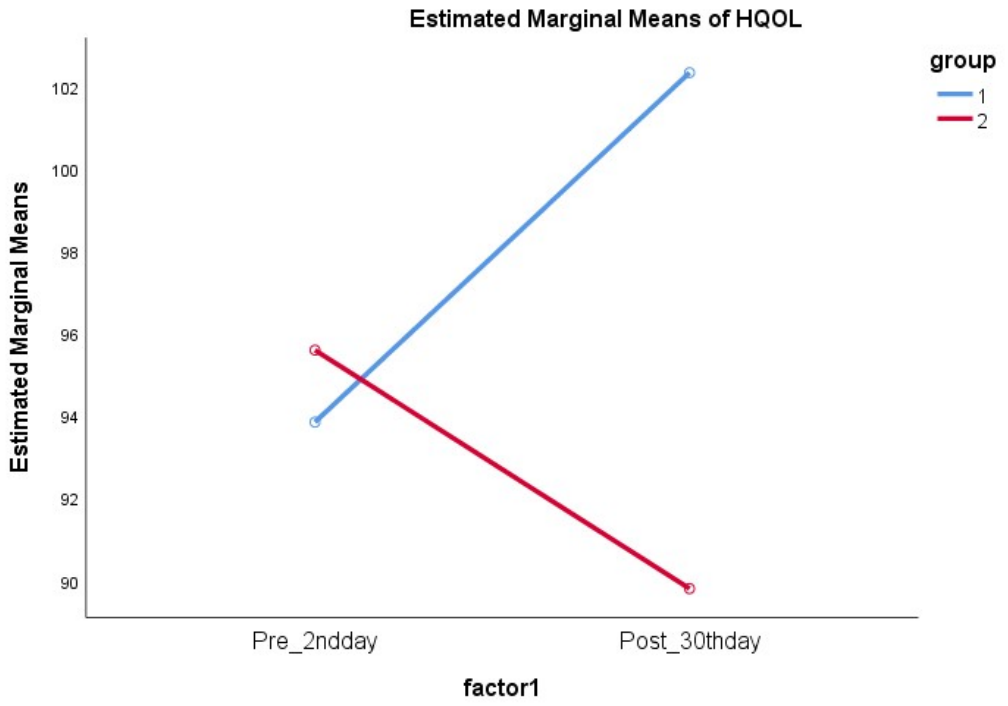


Fig 7. Profile plot showing the change in the Health related quality of life over time across study groups

Figure 7 representing the estimated marginal mean of health related quality of life with time in both experimental and control group, which shows that the estimated marginal mean of health related quality of life in experimental group increased on 30th day post intervention observation, however estimated marginal mean of health related quality of life in control group decreased on post operative day 30$^{th.}$

Comparison of range of motion, muscle strength and health related quality of life between experimental and control group showed a statistically significant difference as interaction p value is <0.001. So, Null hypothesis (H_0) is rejected and it s concluded that there is a significant difference between level of range of motion, muscle strength and health related quality of life among post mastectomy patients who receive comprehensive intervention and who did not receive intervention.

Section V: Association between range of motion, muscle strength and health related Quality of life with selected socio-demographic and clinical variables.

Table 9 Association of POD 2nd range of motion with selected Socio demographic and Clinical variables

N=40

Variable	**Categories**	**Median**	**IQR(Q1-Q3)**	**Test value (p-value)**
Age	18-30	1	0-1	1.43 (0.49)#
	30.1-40	1	0-1	
	40.1-50	0	0-1	
	>50	0	0-1	
Education	Illiterate	1	0-1	0.75 (0.86)#
	Primary school	1	0-1	
	Middle school	1	0-1	
	High school	0	0-1	
	Graduate	1	0-1	
	Post graduate	1	0-1	
Occupation	Unemployed	0	0-1	0.41 (0.52) ##
	Professional	0	0-1	
Type of family	Nuclear	1	0-1	144.0 (0.49)##
	Joint	0	0-1	
Comorbid illness	Absent	0	0-1	167.5 (0.58)##
	Present	0	0-1	

Cont….

Table 9 Association of POD 2nd range of motion with selected Socio demographic and Clinical variables			**N=40**	
Period of illness	< 6 months	0	0-1	0.08 (0.96)#
	6 months – 1 year	0	0-1	
	>1 year	0	0-1	
BMI	Underweight	1	0-1	6.31 (0.09)#
	Normal	1	0-1	
	Overweight	0	0-0	
	Obesity	0	0-1	
Type of mastectomy	Modified radical mastectomy	0	0-1	**79.50 (0.21)##**
	Breast conservative surgery	0	0-0	
Adjuvant therapy	No	0	0-1	**167.50 (0.58)##**
	Yes	0	0-1	
#- Kruskal wallis H test ##- Mann-whitney U test IQR- Inter quartile range				

Table 9 represents the association of POD 2nd range of motion with selected socio demographic and clinical variables No significant association was found in POD 2nd range of motion with selected Socio demographic and clinical variables.

Table 10 Association of POD 2nd **Health related quality of life with selected Socio demographic and Clinical variables** N=40

Variable	Categories	Mean	SD	N	Test value(p-value)
Age	18-30	91.00	15.556	2	0.56
	30.1-40	97.36	8.310	11	(0.64) #
	40.1-50	95.08	9.718	12	
	>50	93.00	9.419	15	
Education status	Illiterate	90.00	9.899	2	0.76
	Primary school	97.80	7.014	5	(0.59) #
	Middle school	91.40	10.752	10	
	High school	96.15	10.637	13	
	Graduate	99.50	5.260	4	
	Post graduate	93.00	7.071	6	
Occupation	Unemployed	95.16	9.627	31	0.48
	Unskilled work	92.75	8.655	4	(0.64) ##
Type of family	Nuclear	95.42	10.344	12	0.31
	Joint	94.43	8.983	28	(0.76)##
co morbid illness	Absent	95.16	9.627	31	0.48
	Present	92.75	8.655	4	(0.64) ##
Period of illness	< 6 months	96.29	9.793	14	0.40
	6 months – 1 year	93.33	7.911	18	(0.68)#
	>1 year	95.13	11.850	8	

Cont…

Table 10 Association of POD 2nd **Health related quality of life with selected Socio demographic and Clinical variables**					**N=40**
BMI	Underweight	87.00	4.243	2	1.47 (0.24)#
	Normal	97.29	8.802	17	
	Overweight	91.86	8.900	14	
	Obesity	96.43	10.876	7	
Type of mastectomy	Modified radical mastectomy	94.33	9.902	33	0.57 (0.57)##
	Breast conservative surgery	96.57	5.740	7	
Adjuvant therapy	No	97.40	9.323	25	2.51 (0.02*)##
	Yes	90.27	7.564	15	
#-one way ANOVA ## Independent t test *statistically significant at p value <0.05 level.					

Table 10 represents the association of POD 2nd health related quality of life with selected socio demographic and clinical variables and a significant association was found in pre health related quality of life with adjuvant therapy, participants not receiving adjuvant therapy have better health related quality of life as compared to the participants receiving adjuvant therapy.

CHAPTER V
DISCUSSION

CHAPTER V

DISCUSSION

This chapter provides a brief discussion about major findings, conclusion and implications to nursing, limitations and future recommendations of the study.

Major findings of the study

Finding of the study are given below:

- While comparing range of motion between experimental and control group statistically significant improvement was seen in experimental group as compared to control group after the administration of comprehensive intervention as p value is <0.001.
- Comparison of muscle strength between experimental and control group, also showed statistically significant improvement in experimental group as compared to control group after administration of comprehensive intervention as p value is <0.001.
- Comparison of health related quality of life in experimental and control group comprehensive intervention was found to be effective in improving the health related quality of life in experimental group as compared to control group as the p value is <0.001.However in control group decrease in the mean health related quality of life was found from POD 2^{nd} to POD30^{th}. Mean±SD value is 95.60±9.81 and 89.80±9.86 on POD 2^{nd} and POD 30^{th} respectively.

- From these findings comprehensive intervention is found to be effective in improving range of motion, muscle strength and health related quality of life among post mastectomy patients.
- A significant association was found on POD 2nd in health related quality of life with adjuvant therapy, participants not receiving adjuvant Therapy have better health related quality of life as compared to the participants receiving adjuvant therapy.

Discussion

Current study was carried out to evaluate the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients. Finding of the study demonstrated that comprehensive intervention was effective in improving range of motion and health related quality of life among post mastectomy patients.

Patients undergoing mastectomy require information regarding post operative care practices in hospitals and at home, prevention of post operative complications, shoulder and arm exercises and breast self examinations. Team of researchers done this study to evaluate the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients, considering the needs of patients, current evidences and clinical practice guidelines and protocols to improve the health outcomes of the patients undergoing mastectomy and to facilitate rehabilitation of the patient after hospital discharge.

In the current study, a comprehensive intervention comprising of exercise therapy for early recovery of patient along with educational booklet, video demonstration on exercise therapy along with telephonic follow was done to facilitate the compliance with the intervention. In addition to this, compliance with the intervention was ensured with the help of adherence checklist and patients was instructed to fill the checklist at home and checklist was collected from each participant during follow up to assess their compliance towards prescribed intervention protocol. Current study incorporated multimedia educational package home care after mastectomy, supervised exercise therapy and repeated reinforcement to enhance behavior modification and patients self confidence.

Moreover, evidences suggest that nurse led supervised model of care with individualized and tailored support and resources to promote self management can be an effective supportive intervention for breast cancer survivors[25]. The current intervention offered individualized and consistent support to patients and helped them to manage self care through regular physical therapy and follow up. As the treatment of breast cancer takes longer time for recovery. Incorporation of multi-component interventional modalities are essential for the early recovery of patients after surgery and to prevent interminable complications during the treatment.

Post mastectomy patients experiences poor quality of life due to various surgery related complications like pain, stiffness and limited shoulder range of motion, impaired physical functioning and increased psychological distress. Finding of the current study demonstrated significant effect of comprehensive intervention in improving quality of life among post mastectomy patients. Consistent finding were reported in previous study by Kang JJ, Lee H et al who conducted a study to determine the efficacy of 4 week nurse led

Nurse led rehabilitation intervention including exercise therapy along with psychosocial support and results were found to be effective in improving quality of life of breast cancer survivors.[25] Consistent results have been reported in the study done by Zhou K et al to evaluate the effect of progressive upper limb exercises and muscle relaxation training on upper limb functioning and quality of life among patients with breast surgery and they found improvement in upper limb function and health related quality of life after intervention.[29] B. Cheema B.S. et al also reported significant improvement in overall quality of life with administration of exercise training.[36]

Post mastectomy patients have limited shoulder joint mobility mainly on ipsilateral side of surgical site. Limited shoulder mobility restricts the range of motion of joint which results in poor functional status of the patient. Finding of the present study showed significant effect of comprehensive intervention in improving the range of motion among post mastectomy patients. Concurrent finding found in previous studies by [30.31,32.] Study carried out by Priya C to evaluate the effectiveness of post mastectomy exercises on range of motion after breast surgery breast surgery and noted a statistically significant improvement of range of motion afterbthe exercise therapy. Similar kind of study doneby Kilgour, Robert D. et al. had showed significant results of self-administered, home-based exercise (HBE) rehabilitation programme on range of motion among women after breast surgery[35].

Congruent with the findings reported by Naczk A et al. and Lin Y et al. in the present study also progressively improvement noted in the muscle strength after the administration of comprehensive intervention to the experimental group participants.

They demonstrated the effectiveness of inertial training[43] and aerobic exercises[24] in improving the muscle strength.

Incorporation of multi-component interventional modalities are said to be consequential in early recovery of patients following mastectomy. Treatment of breast cancer takes longer time and these kinds of multi-component studies can also be done for long duration, so that patient can follow, assessed and monitored for any interminable complication during their treatment.

Limitations

The study has limitations in some areas. The study was done in small sample size and no randomization was done.

Implications

- In nursing practices early rehabilitation intervention can be used as a routine care in the oncology care settings for patients after breast surgery to improve their overall quality of life.
- All healthcare professionals working in breast cancer units, including nurses caring for women with breast cancer, should participate in ongoing in-service education programs to update, acquire, and develop the knowledge, performance, and attitude necessary to manage this population of patients.
- More research studies can be conducted to assess the outcomes of new management strategies for patients with mastectomy. In addition, extended research studies are required to assess the effect of implementing the developed interventional regimens for post-mastectomy women.

Conclusion

This study evaluates the effect of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients. As to our knowledge, no such kind of intervention has been conducted so far, in India. The finding of this study revealed that patients with mastectomy have various post operative problems related to limited mobility and also impact on their quality of life. With the introduction of various interventional modalities, quality of life can be improved among post mastectomy patients and also improves the mobility which eventually reduces the hospital stay and also prevent any further complication among post mastectomy patients.

Recommendations

1. It is advised that a similar study be replicated with a bigger sample size and diverse teaching strategies, together with frequent reinforcement and rehabilitation therapies which is crucial in enhancing breast cancer patients' condition and understanding.
2. Similar kind of multi centric study can also be done.
3. More studies related to rehabilitation practices among post mastectomy patients will help to get more strong research evidences, and further support to implement these kind of practices in the clinical settings.

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ANNEXURES

ANNEXURE1: Letter seeking permission to conduct the study

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, BHOPAL
Saket Nagar, Bhopal – 462020 (M.P)
Institutional Human Ethics Committee- Student Research (IHEC-SR)
www.aiimsbhopal.edu.in Email: ihecpgr@aiimsbhopal.edu.in

Ref Number: AIIMS/BPL/IHECSR/July/22/MscN/13 **Date:** 28th February 2023

Letter of Permission

Student Investigator: **ANGITA** **Nursing College, AIIMS, Bhopal**	**Guide:** **Dr. Jisa George T** **Nursing College, AIIMS, Bhopal** **Co-Guides:** **Mr. Kumarsamy AP, Dr Vinay Kumar**

AIIMS, Bhopal Institutional Human Ethics Committee- Student Research (IHEC-SR) in its 7th meeting held on 22nd February 2023 discussed your proposal titled **"Effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients."** and evaluated it for suitability for your dissertation as required for fulfilment of MSc (Nursing).

Following members attended the meeting:

1. Prof. D. K. Pal, Former HoD Community Medicine, GMC, Bhopal……Chairperson
2. Prof. Rajnish Joshi, Professor of General Medicine, AIIMS, Bhopal……Member
3. Prof. Amit Agrawal, Professor of Neurosurgery, AIIMS, Bhopal……..Member
4. Dr. Sunita Athawale, Professor of Anatomy, AIIMS, Bhopal……..…Member
5. Dr. Girish Bhatt, Addl. Professor of Paediatrics, AIIMS, Bhopal……...Member
6. Dr. Ujjawal Khurana, Assoc. Professor of Pathology, AIIMS, Bhopal……...Member
7. Dr. Ankur Joshi, Assoc. Professor of CFM, AIIMS, Bhopal……...Member
8. Mr. Trivesh Goswami, Law Officer, AIIMS Bhopal,…..……Member
9. Dr. Shashank Purwar, Professor of Microbiology, AIIMS, Bhopal…..…Member Secretary

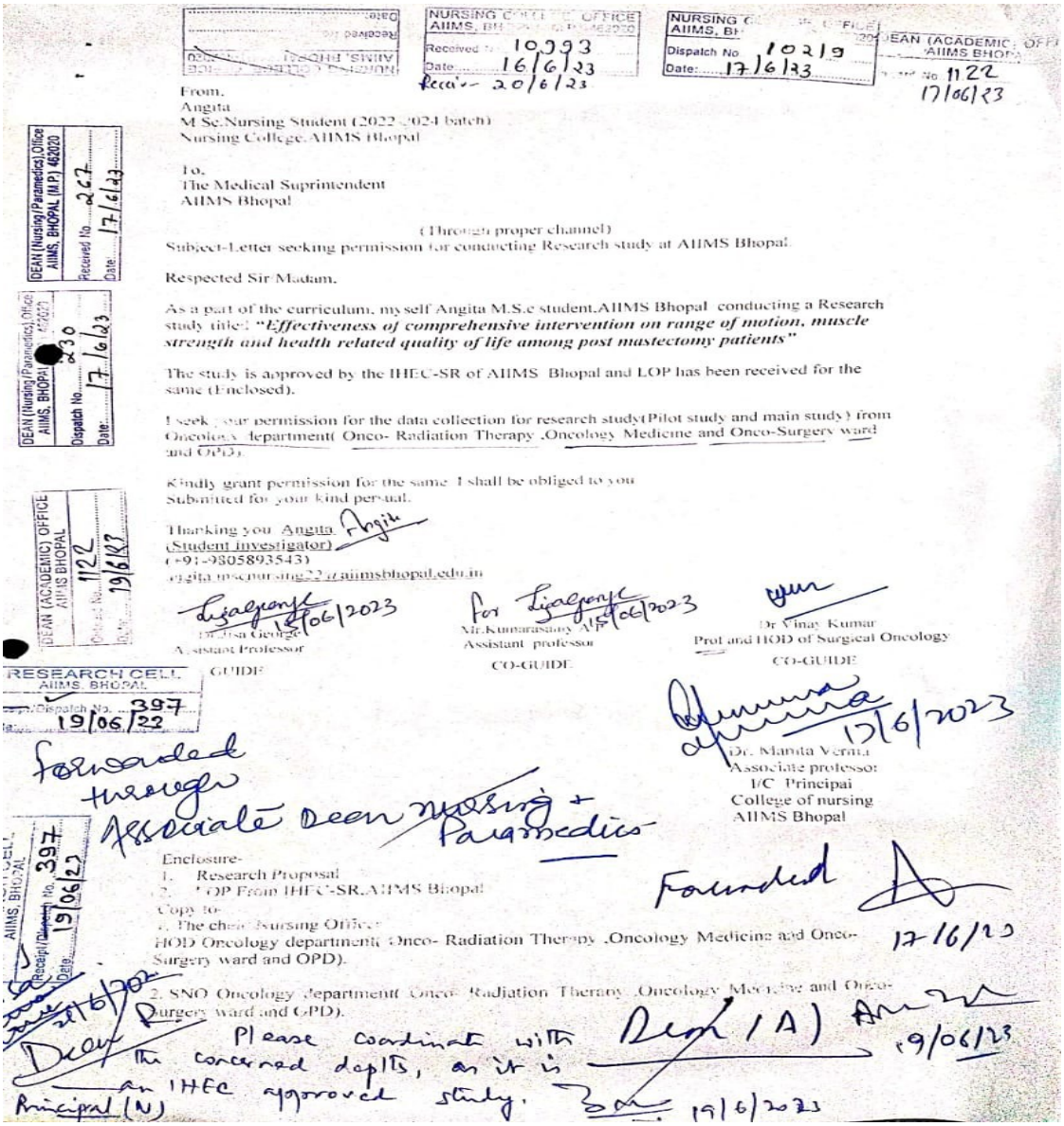
The decision of the committee is as follows:

The AIIMS, Bhopal IHEC-SR approves your research protocol. All research related activities must begin only after the date of this approval. The validity of this approval is till two years from the date of issuance. Please submit a closure report / renewal request before expiration of the validity for this approval.

Shashank Purwar

Dr. Shashank Purwar
Member Secretary, AIIMS Bhopal IHEC-SR
Professor of Microbiology
AIIMS, Bhopal
Contact Number: 7773010099

ANNEXURE2: Permission from Hospital Authority to conduct study



From,
Angita
M Sc.Nursing Student (2022 -2024 batch)
Nursing College AIIMS Bhopal

To,
The Medical Suprintendent
AIIMS Bhopal

(Through proper channel)

Subject-Letter seeking permission for conducting Research study at AIIMS Bhopal.

Respected Sir/Madam,

As a part of the curriculum, myself Angita M.S.c student,AIIMS Bhopal conducting a Research study titled ***"Effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients"***

The study is approved by the IHEC-SR of AIIMS Bhopal and LOP has been received for the same (Enclosed).

I seek your permission for the data collection for research study(Pilot study and main study) from Oncology department(Onco- Radiation Therapy ,Oncology Medicine and Onco-Surgery ward and OPD).

Kindly grant permission for the same. I shall be obliged to you
Submitted for your kind persual.

Thanking you Angita
(Student investigator)
(+91)-9805893543)
angita.mscnursing22@aiimsbhopal.edu.in

Dr Lisa George
Assistant Professor
GUIDE

Mr.Kumarasamy A
Assistant professor
CO-GUIDE

Dr Vinay Kumar
Prof and HOD of Surgical Oncology
CO-GUIDE

Dr. Manda Verma
Associate professor
I/C Principal
College of nursing
AIIMS Bhopal

Enclosure-
1. Research Proposal
2. LOP From IHEC-SR,AIIMS Bhopal

Copy to-
1. The chief Nursing Officer
HOD Oncology department(Onco- Radiation Therapy ,Oncology Medicine and Onco-Surgery ward and OPD).
2. SNO Oncology Jepartment(Onco- Radiation Therapy ,Oncology Medicine and Onco-Surgery ward and OPD).

Please coordinate with the concerned depts, as it is an IHEC approved study.

Principal (N)

ANNEXURE 3: **Data collection tool in English**

1.Age (in years)
18 – 30
30.1 – 40
40.1 – 50
>50.1

2. Marital status
Unmarried
Married
Widower
Divorce

3. Education status
Illiterate
Primary school
Middle school
High school
Intermediate/diploma
Graduate
Post-graduate

4. Occupation
Unemployed
Unskilled worker
Semiskilled worker
Skilled worker
Clerical/farmer
Semi-professional
Professional
Types of family

5. Nuclear
Joint
Extended
Living alone

6. Any co-morbid illness
No
Yes

7. Period of illness
< 6months
6 months 1day – 1 year
> 1 year

8. Body Mass Index
<18.5
18.5-24.5
25-29.5
>30

9. Type of mastectomy
Modified radical mastectomy
Breast conservative surgery
Radical Mastectomy
Other

10. Neoadjuvant therapy
Yes
No

ANNEXURE 4: DATA COLLECTION TOOL IN HINDI

1. आयु (वर्षों में)
18 – 30
30.1 – 40
40.1 – 50
>50.1

2. वैवाहिक स्थिति
अविवाहित
शादीशुदा
विधुर
तलाक

3. शिक्षा की स्थिति
अशिक्षित
प्राथमिक शाळा
मिडिल स्कूल
उच्च विद्यालय
इंटरमीडिएट/डिप्लोमा
स्नातक
स्नातकोत्तर

4. व्यवसाय
बेकार
अकुशल श्रमिक
अर्धकुशल कार्यकर्ता
कुशल श्रमिक
लिपिक/किसान
अर्ध-पेशेवर
पेशेवर

5. परिवार के प्रकार
नाभिकीय
जोड
विस्तारित
अकेले रहते हैं

6. कोई सह-रुग्ण बीमारी

7. बीमारी की अवधि
< 6 महीने
6 महीने 1 दिन – 1 साल
> 1 साल

8. बॉडी मास इंडेक्स
<18.5
18.5-24.5
25-29.5
>30

9. मास्टेक्टॉमी का प्रकार
संशोधित कट्टरपंथी मास्टेक्टॉमी
स्तन रूढ़िवादी सर्जरी
रेडिकल मास्टेक्टॉमी
अन्य _____

10. नियोएडजुवेंट थेरेपी
हाँ
नहीं

ANNEXURE5: Self structured range of motion chart

	Normal ROM	**Poor ROM**
1) Horizontal Adduction		
2) Horizontal Abduction		
3) Forward flexion		
4) Forward Extension		
5) Inward rotation		
6) External rotation		

Interpretation

	Expected angle for normal ROM	**poor degree ROM**
Horizontal Adduction	130 degree	<130 degree
Horizontal Abduction	90 degree	<90 degree
Forward flexion	180 degree	<180 degree
Forward Extension	50-60 degree	<50 degree
Inward rotation	60-90 degree	<60 degree
External rotation	80-90 degree	<80 degree

ANNEXURE6: Scale to assess muscle strength (MedicalResearch Council muscle grading scale)

5/5:Active muscle movement against full resistance-excellent/normal

4/5:Active muscle movement against some resistance-good 3/5:Active muscle movement against gravity-fair

2/5: Muscle moves across a surfacebut cannot overcome gravity

1/5:Flicker,palpable or visible muscle contraction –trace

0/5:Total paralysis,no muscularcontraction detected-zero/absent

ANNEXURE7:Questionnaire to assess health related quality of life (FACT- B) ENGLISH

	PHYSICALWELL-BEING	Not atall	Alittle bit	Some-what	Quite abit	Very much
GP1	Ihavealackofenergy	0	1	2	3	4
GP2	Ihavenausea	0	1	2	3	4
GP3	Becauseofmyphysicalcondition,Ihavetrouble meetingtheneedsofmyfamily	0	1	2	3	4
GP4	Ihavepain	0	1	2	3	4
GP5	Iambotheredbysideeffectsoftreatment	0	1	2	3	4
GP6	Ifeelill	0	1	2	3	4
GP7	Iamforcedtospendtimeinbed	0	1	2	3	4

	SOCIAL/FAMILYWELL-BEING	Not atall	Alittle bit	Some-what	Quite abit	Very much
GS1	Ifeelcloseto myfriends	0	1	2	3	4
GS2	Igetemotionalsupportfrommyfamily	0	1	2	3	4
GS3	Igetsupportfrommyfriends	0	1	2	3	4
GS4	Myfamilyhasacceptedmyillness	0	1	2	3	4

GS5	I am satisfied with family communication about my illness	0	1	2	3	4
GS6	Ifeelclosetomypartner(orthepersonwhoismy mainsupport).....	0	1	2	3	4
Q1	*Regardless of your current level of sexual activity, please answerthefollowingquestion.Ifyouprefernottoanswerit, please mark this box ☐ and go to the next section.*					
GS7	Iamsatisfiedwithmysexlife.....	0	1	2	3	4

	EMOTIONALWELL-BEING	**Not atall**	**Alittle bit**	**Some-what**	**Quite abit**	**Very much**
GE1	Ifeelsad	0	1	2	3	4
GE2	IamsatisfiedwithhowIamcopingwithmyillness.....	0	1	2	3	4
GE3	Iamlosinghopeinthefightagainstmyillness	0	1	2	3	4
GE4	Ifeelnervous.....	0	1	2	3	4
GE5	Iworryaboutdying	0	1	2	3	4
GE6	Iworrythatmyconditionwillgetworse.....0		1	2	3	4

	FUNCTIONALWELL-BEING	**Not atall**	**Alittle bit**	**Some-what**	**Quite a bit**	**Very much**

GF1	Iamabletowork(includeworkathome)	0	1	2	3	4
GF2	Mywork(includeworkathome)isfulfilling.....	0	1	2	3	4
GF3	Iamabletoenjoylife.....	0	1	2	3	4
GF4	Ihaveacceptedmyillness.....	0	1	2	3	4
GF5	Iamsleepingwell.....	0	1	2	3	4
GF6	IamenjoyingthethingsIusuallydoforfun.....	0	1	2	3	4
GF7	Iamcontentwiththequalityofmyliferightnow.....	0	1	2	3	4

	ADDITIONALCONCERNS	**Notat all**	**Alittle bit**	**Some-what**	**Quite abit**	**Very much**
B1	Ihavebeenshortofbreath	0	1	2	3	4
B2	Iamself-consciousaboutthewayIdress.....	0	1	2	3	4
B3	One orbothofmyarmsareswollenortender	0	1	2	3	4
B4	Ifeelsexuallyattractive	0	1	2	3	4
B5	Iambotheredbyhairloss	0	1	2	3	4
B6	Iworrythatothermembersofmyfamilymight somedaygetthesameillnessIhave	0	1	2	3	4
B7	Iworryabouttheeffectofstressonmyillness.....	0	1	2	3	4
B8	Iambotheredbyachangein weight	0	1	2	3	4
B9	Iamabletofeellikeawoman	0	1	2	3	4

P2	Ihavecertainpartsofmybodywhereiexperiencepain..	0	1	2	3	4

ANNEXURE8: QUESTIONAAIRE TO ASSESS HEALTH RELATED QUALITY OF LIFE (HINDI)

नीचे दी गई सूची में ऐसे कथन हैं जो आप जैसी बीमारी से ग्रस्त लोगों के अनुसार महत्वपूर्ण हैं। **<u>पिछले 7 दिनों</u> पर लागू होने वाले अपने उत्तर का संकेत देने के लिए कृपया हर पंक्ति में एक अंक पर गोला या निशान बनाएँ।**

	<u>शारीरिक स्वस्थता</u>	**बिल्कुल नहीं**	**थोड़ा सा**	**कुछकुछ**	**काफ़ी कुछ**	**बहुत अधिक**
G P1	**मुझमें ताकत की कमी है** 0	0	1	2	3	4
G P2	मुझे उबकाई आती है.....	0	1	2	3	4
G P3	मेरी शारीरिक हालत के कारण मुझे अपने परिवार की ज़रूरतें पूरी करने में कठिनाई होती है.....	0	1	2	3	4
G P4	मुझे दर्द रहता है.....	0	1	2	3	4
G P5	इलाज के बुरे प्रभाव से मुझे परेशानी होती है.....	0	1	2	3	4
G P6	मैं बीमार महसूस करता/करती हूँ.....	0	1	2	3	4
G P7	**मुझे बिस्तर में पड़े रहना पड़ता है 0**	0	1	2	3	4

	<u>सामाजिक / पारिवारिक सुख</u>	**बिल्कुल नहीं**	**थोड़ा सा**	**कुछकुछ**	**काफ़ी कुछ**	**बहुत अधिक**
G S1	मैं अपने दोस्तों को करीब महसूस करता/करती हूँ.....	0	1	2	3	4
G S2	अपने परिवार से मुझे भावनात्मक सहारा मिलता है.....	0	1	2	3	4
G S3	मुझे अपने दोस्तों से सहारा मिलता है.....	0	1	2	3	4
G S4	मेरे परिवार ने मेरी बीमारी स्वीकार कर ली है.....	0	1	2	3	4
G S5	मेरी बीमारी के बारे में परिवार में जो बातचीत होती है, उससे मैं संतुष्ट हूँ.....	0	1	2	3	4
G S6	मैं अपने साथी (या मुख्य मददगार) को करीब महसूस करता/करती हूँ.....	0	1	2	3	4

Q1 *वर्तमान में आपके शारीरिक संबंध कैसे हैं इस पर ध्यान दिए बिना, कृपया निम्नलिखित प्रश्न का उत्तर दें। यदि आप इस प्रश्न का उत्तर देना नहीं चाहें, तो कृपया इस बॉक्स* ☐ *पर निशान लगाएं और अगले खंड में जाएं।*

मैं अपने यौन जीवन से संतुष्ट हूँ 0	0	1	2	3	4

<u>पिछले 7 दिनों</u> पर लागू होने वाले अपने उत्तर का संकेत देने के लिए कृपया हर पंक्ति में एक अंक पर गोला या निशान बनाएँ।

	<u>भावनात्मक स्वस्थता</u>	**बिल्कुल नहीं**	**थोड़ा सा**	**कुछकुछ**	**काफ़ी कुछ**	**बहुत अधिक**
GE1	**मैं उदास रहता/रहती हूँ 0**	0	1	2	3	4
GE2	**मैं अपनी बीमारी का जिस तरह सामना कर रहा/रही हूँ उससे संतुष्ट हूँ 0**	0	1	2	3	4
GE3	अपनी बीमारी से लड़ते हुए मैं आशा खो रहा/रही हूँ.....	0	1	2	3	4
GE4	मुझे घबराहट होती है.....	0	1	2	3	4
GE5	मैं मृत्यु के बारे में चिंतित हूँ.....	0	1	2	3	4
GE6	मैं चिंतित हूँ कि कहीं मेरी हालत और न बिगड़ जाए.....	0	1	2	3	4

	<u>कार्यात्मक स्वस्थता</u>	**बिल्कुल नहीं**	**थोड़ा सा**	**कुछकुछ**	**काफ़ी कुछ**	**बहुत अधिक**
GF1	मैं काम (घर के कामों सहित) करने लायक हूँ.....	0	1	2	3	4
GF2	मेरा काम (घर के कामों सहित) मेरे अनुकूल है.....	0	1	2	3	4
GF3	मैं जीवन का आनंद लेता/लेती हूँ.....	0	1	2	3	4
GF4	मैंने अपनी बीमारी को स्वीकार कर लिया है.....	0	1	2	3	4
GF5	मुझे अच्छी नींद आती है.....	0	1	2	3	4
GF6	मैं मज़े के लिए जो करता/करती हूँ, उससे मुझे खुशी होती है.....	0	1	2	3	4

G E7	अपने वर्तमान जीवन–स्तर से मैं संतुष्ट हूँ.....	0	1	2	3	4

	अतिरिक्त चिंताएँ	**बिल्कुल नहीं**	**थोड़ा सा**	**कुछकुछ**	**काफ़ी कुछ**	**बहुत अधिक**
B1	मुझे सांस की कमी हो गई है	0	1	2	3	4
B2	मैं अपने कपड़े पहनने के तरीके को लेकर आत्म-जागरूक हूं.....	0	1	2	3	4
B3	मेरी एक या दोनों भुजाएँ सूजी हुई या कोमल हैं.....	0	1	2	3	4
B4	मैं यौन रूप से आकर्षक महसूस करता हूं.....	0	1	2	3	4
B5	बालों के झड़ने से परेशान हूं.....	0	1	2	3	4
B6	मुझे चिंता है कि किसी दिन मेरे परिवार के अन्य सदस्यों को भी वही बीमारी हो सकती है जो मुझे है	0	1	2	3	4
B7	मुझे अपनी बीमारी पर तनाव के प्रभाव की चिंता है	0	1	2	3	4
B8	मैं वजन में बदलाव से परेशान हूं.....	0	1	2	3	4
B9	मैं एक महिला की तरह महसूस करने में सक्षम हूं	0	1	2	3	4
P2	मेरे शरीर के कुछ हिस्से हैं जहां मुझे दर्द का अनुभव होता है	0	1	2	3	4

ANNEXURE9: Screening tool for data collection

Codeno

Name

Age

Gender

Ward

Date of assessment

Date of operation

Address

Contactnumber

PostmastectomyfemalepatientsatAIIMSBhopal.	**Yes/no**
• Patientswhoarewillingtoparticipateorinformedconsentgivenbythe patient.	**Yes/no**
• Patientswithagemorethan18 years.	**Yes/no**
• Patientshaveanymusculoskeletalproblemsofupperextremity.(fracture, parasthesis,paralysis)	**Yes/no**
• Patientswithcognitiveimpairmentwhoarenotabletofollowthe commands.	**Yes/no**

ANNEXURE10: Scoring Criteria of FACT-B

Instructions:*1.Recordanswersin "itemresponse"column.Ifmissing,markwithanX

2. Performreversalsasindicated,andsumindividualitemstoobtain a score.

3. Multiplythesumoftheitemscoresbythenumberofitemsinthe subscale, then divide by the

numberofitemsanswered.Thisproducesthesubscalescore.

4. Addsubscalescorestoderivetotalscores(TOI,FACT-G&FACT-B).

5. Thehigherthescore,thebettertheQOL.//

Subscale	**Item Code ItemScore**	**Reverse item?**		**Item response**
PHYSICAL	GP1 =_____	4	-	_____
WELL-BEING	GP2 =_____	4	-	_____
(PWB)	GP3 =_____	4	-	_____
*Scorerange:*0-28	GP4 =_____	4	-	_____
	GP5 =_____	4	-	_____
	GP6 =_____	4	-	_____
	GP7 =_____	4	-	_____

Sum individualitem scores: _____

Multiply by7: _____

Dividebynumberofitemsanswered:

_____=**PWBsubscalescore**

SOCIAL/FAMILY	GS1	0	+	_____	=_____
WELL-BEING	GS2	0	+	_____	=_____
(SWB)	GS3	0	+	_____	=_____
	GS4	0	+	_____	=_____
*Scorerange:*0-28	GS5	0	+	_____	=_____
	GS6	0	+	_____	=_____
	GS7	0	+	_____	=_____

Sum individualitem scores: _____

Multiply by7: _____

Dividebynumberofitemsanswered:

_____=**SWBsubscalescore**

EMOTIONAL	GE1	4	-	_____	=_____
WELL-BEING	GE2	0	+	_____	=_____
(EWB)	GE3	4	-	_____	=_____
	GE4	4	-	_____	=_____
*Scorerange:*0-24	GE5	4	-	_____	=_____
	GE6	4	-	_____	=_____

Sum individualitem scores: _____

Multiply by6: _____

Dividebynumberofitemsanswered:

_____=**EWBsubscalescore**

FUNCTIONAL	GF1	0	+	_____	=_____
WELL-BEING	GF2	0	+	_____	=_____
(FWB)	GF3	0	+	_____	=_____
	GF4	0	+	_____	=_____
*Scorerange:*0-28	GF5	0	+	_____	=_____
	GF6	0	+	_____	=_____
	GF7	0	+	_____	=_____

Sum individualitem scores: _____

Multiply by7: _____

Dividebynumberofitemsanswered:

_____=**FWBsubscalescore**

FACT-BScoringGuidelines(Version4)–Page2

Subscale	**Item Code**	**Reverse item?**		**Item response**	
	ItemScore				
BREAST	B1	4	-	_____	=_____
CANCER	B2	4	-	_____	=_____
SUBSCALE	B3	4	-	_____	=_____
(BCS)	B4	0	+	_____	=_____
	B5	4	-	_____	=_____

*Scorerange:*0-40

B6	4	-	_____	=_____
B7	4	-	_____	=_____
B8	4	-	_____	=_____
B9	0	+	_____	=_____
P2	4	-	_____	=_____

Sum individual item scores: _____

_____

Multiply by 10: _____

_____**=BCSubscalescore**

Dividebynumberofitemsanswered:

ToDeriveaFACT-Btotalscore:
*Scorerange:*0-148

_____+_____+_____+_____+_____
=_____=**FACT-BTotalscore**

(**PWB**score)(**SWB**score)(**EWB**score)(**FWB**score)(**BCS**score)

ANNEXURE11: LIST OF EXPERTS FOR CONTENTVALIDITY

SR.NO	NAMEOFEXPERT	DEPARTMENT&DESIGNATION
1.	DR.NEELESHSHRIVASTAVA	SURGICALONCOLOGY ASSISTANTPROFESSOR AIIMS BHOPAL
2.	DR.PREKSHASHARMA	ONCOLOGY NURSING ASSOCIATEPROFESSOR COLLEGEOFNURSING,FARIDKOT UNIVERSITY
3.	MRS.PROMILCHAUHAN	MEDICAL SURGICAL NURSING TUTORCUMCLINICALINSTRUCTOR SISTERNIVEDITAGOVT.NURSINGCOLLEGE, IGMC,SHIMLA
4.	MRS.SANGEETASHARMA	ONCOLOGYNURSING LECTURER SISTERNIVEDITAGOVT.NURSINGCOLLEGE, IGMC,SHIMLA
5.	MRS.RANJANAVERMA	MEDICALSURGICALNURSING ASSISTANT PROFESSOR COLLEGEOFNURSINGAIIMS,BHOPAL
6.	DR.ANURAGBHAIPATIDAR	MEDICALSURGICALNURSING ASSOCIATE PROFESSOR ASSOCIATE PROFESSOR COLLEGEOFNURSINGAIIMS,BHOPAL
7.	MR.RVELMURUGAN	MEDICALSURGICALNURSING ASSISTANT PROFESSOR ASSISTANT PROFESSOR COLLEGEOFNURSINGAIIMS,BHOPAL
8.	MRS.PRABHAAGNIBHOJ	ONCOLOGYNURSING LECTURER COLLEGEOFNURSING,BMHRC,BHOPAL
9.	MR.ANILKUMAR	MEDICALSURGICALNURSING ASSOCIATE PROFESSOR COLLEGEOFNURSING,FARIDKOT UNIVERSITY
10.	DR.SONVEERGOUTAM	SURGICALONCOLOGY SENIOR RESIDENT AIIMSBHOPAL

ANNEXURE12:Letter requesting for content validity

DearExperts,

ThisstudyconsistSelf-structuredtool,whichconsistsfollowing:

Socio demographic and clinical data(10 items) and self structured range of motion chart(6items),Yourexpertopinionandkindcooperationwillbehighlyappreciated.

Itemnumber	Highly relevant 4	Quite relevant 3	Somewhat relevant 2	Not relevant 1	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Highly relevant 4	**Quite relevant 3**	**Somewhat relevant 2**	**Not relevant 1**	**Remarks**

ANNEXURE13

:**LETTER REQUESTING EXPERTS OPINION AND SUGGESTIONS FOR THE CONTENT VALIDITY OF RESEARCH TOOL**

Date:
From,
Angita
M.Sc. Nursing (Batch 2022-24)
Nursingcollege,AIIMSBhopal.

To,
……..
……
……

Subject: Requestingtheexpert'sopinionandsuggestionforthecontentvalidityofresearchtool

Respected Sir/ Madam,

I,Angita,M.Sc.Nursing(Batch2022-24)student inOncologyNursingatNursingCollegeofAIIMSBhopal.Ihave selected the topic mentioned below for my dissertation to be submitted as partial fulfillment of Masters in Nursing Degree programme, at the nursing college, AIIMS Bhopal.

Titleofthestudy:"effectivenessofcomprehensiveinterventiononrangeofmotion,musclestrengthandhealth related quality of life among post mastectomy patients"

InthisregardIhavepreparedthefollowing:

1. SelfStructuredtoolfordatacollectioninEnglish
2. SelfStructuredtoolfordatacollectioninHindi

Kindlygothroughthetoolandgive yourvaluableremarksandsuggestionforanymodificationneededin thecontent. I shall be grateful to you for your valuable remarks and suggestion.

Thankingyou.

Enclosedwith

Briefsynopsis,researchtool,criteriachecklistforcontentvalidityofthetool,certificateofvalidation.

Yoursincerely,
Angita
M.Sc.Nursing(Batch2022-24)

GUIDE

Dr.JisaGeorgeT.
AssistantProfessor.
CollegeofNursing,AIIMSBhopal.

Co-Guide

Dr.VinayKumar
Professorand Head
DepartmentofSurgicalOncology,AIIMSBhopal

Co-Guide
Mr.KumarasamyAP
Assistant Professor
CollegeofNursing,AIIMSBhopal

Dr.MamtaVerma
I/C PRINCIPAL
NursingCollege,AIIMSBhopal

Annexure14: CERTIFICATION OF VALIDATION

ThisistocertifythatQuestionnaire/ToolconstructedbyAngita,M.Sc.Nursing2022-24 batch student, Nursing College, AIIMS Bhopal, to be used in her study titled - "**effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life"**has been validated byme and is found to be valid.

OverallRemark:

Signature:

Name of the Expert:

Designation:

Name of the Institution:

Official Seal:

Date:

Place:

ANNEXURE15:

VALIDATIONCHECKLISTFORCENTENTOFINFORMATIONBOOKLET

- Please go through the criteria listed below, which have been formulated for developing information booklet on home care after mastectomy

- If you agree to the criteria listed, please put tick (√) mark in the column of agree and if you disagree put tick (√) mark in the column of disagree.

S.NO.	CONTENT	AGREE	DISAGREE	REMARKS
1.	Selection of the content • Adequate • Appropriate • Accurate			
2.	Organization of content • Organized • Logically • Sequentially			
3.	Teaching learning activities • Adequate • Relevant			
4.	Language • Easytounderstand • Simple • Clear			

Signature of the Expert _____ Name & Designation_____

ANNEXURE16: HINDI TRANSLATION CERTIFICATE

CERTIFICATE OF TRANSLATION

TO WHOM IT MAY CONCERN

This is to certify that Ms. Angita, M.Sc Oncology Nursingstudent of Nursing College, AIIMS Bhopal is conducting research on topic "Effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients". The Hindi version of research tool for this study is a true and accurate translation of the English version and is valid to collect data for research.

Seal & Signature : .....

Name of the language expert.....MANISHA SHARMA.....

Designation : .....Lecturer Hindi.....

Qualification : .....M.A (HINDI)&B.Ed.....

Date : .....26-9-2023.....

Place : .....NURPUR DISTRICT KANGRA H.P.....

ANNEXURE17: ENGLISH TRANSLATION CERTIFICATE

CERTIFICATE OF TRANSLATION

TO WHOM IT MAY CONCERN

This is to certify that Ms. Angita M.Sc Oncology Nursing student of Nursing College, AIIMS Bhopal is conducting research on topic "effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients". The English version of research tool for this study is a true and accurate translation of the English version and is valid to collect data for research.

Seal & Signature : ..... Name Neelam Kapoor

of the language expert :.....

Designation : Lecturer in English

Qualification : M.A. (English), B.Ed.

Date : 26-9-23

Place : H.P.

ANNEXURE18: Participant Information Sheet

1. **STUDYTITLE:** Effectivenessofcomprehensiveinterventiononrangeofmotion, muscle strength and health related quality of life among post mastectomy patients.
2. **STUDYINVESTIGATORS:**
3. **Student:**(Name,Department)AngitaM.Sc.Nursing
4. **Guide**(Name,Department):Dr.JisaGeorgeT-AssistantProf.CollegeofNursingAIIMS Bhopal
5. **Co-Guide/s**(Name,Department):Mr.Kumarsamy-APAssistantProf.Collegeof Nursing AIIMS Bhopal
6. **Co-Guide**(Name,Department):Dr.VinayKumar-Prof&HODSurgicalOncology AIIMS Bhopal
7. **Introduction**:

We are conducting a research study to evaluate the effectiveness of comprehensive intervention which includes physical therapy, educational strategies and multimedia instructional package on range of motion, muscle strength and health related quality of life among post mastectomy patients in AIIMS Bhopal. As we have studied that mastectomy can lead to major complications among patients like lymphedema, cording, shoulder stiffness which can be preventive with comprehensive implications. We would like to take permission from institute health and ethical committee for persuasion of the research study. If you agree to take part voluntarily, we will ask you to sign a consent form.

8. **Purposeofthestudy:**

The aim of our study is to evaluate the effectiveness of comprehensive intervention on range of motion, muscle strength and health related quality of life among post mastectomy patients.

9. **Takingpart–whatit involves:**

a. **DoIhavetotake part?**

Participation in this research is entirely voluntary. A decision to not take part, or to withdraw at any time, will not affect your rights or medical care in any way.

b. **Whatisexpectedof meifItake part?**

If you participate, we will provide comprehensiveintervention which include physical therapy and also education strategies also included in which information booklet given to participant and evaluation of the intervention also be the part of study.

Howlongwillmypartinthe study last?

Your participation in the study would possibly started from second post operative day to last till discharge or fifth post operative and , and evaluation will be done on 14th dayand 4th week follow up day at OPD.

DoIhavetocomeforextravisitsorundergoextrainvestigationsforthestudy?

NO

c. Whatarethepossiblebenefitsintaking part?

Taking part will help gain knowledge about post mastectomy exercises and also helpin adaptation after mastectectomy functionally. This will help the body of knowledge for better implication.

d. Whatarethepossibledisadvantagesandrisksoftakingpart?

All the information collected from participant will be kept confidential, even though all possible measures will be taken to ensure safe data storage and access.

Whathappenstotheinformationcollectedfromme?

All information collected will be kept strictly confidential and not shared with anyone. Results fromthe study will be reported as group data and will not identify you in any way.

e. WhatifIchangemymindregardingparticipationinthestudy?

You are entitled to change your mind and withdraw at any time during the study without any disadvantage or penalty.

f. WhomdoIcontactformoreinformationorifIhavefurtherquestionsor concerns?

Ifyouwantanyinformationorhavequestionsorconcerns,youcancontact:

Dr.(StudentName)
Angita
Postgraduate student,
Department of Nursing , AIIMS, Bhopal
Research

Dr.ShashankPurwar
MemberSecretary,
InstituteEthicsCommittee–Student

9805893543 (7773010099,
ihecpgr@aiimsbhopal.edu.in)

angita.mscnursing22@aiimsbhopal.edu.in

ANNEXURE19: PARTICIPANT INFORMATION SHEET (HINDI)

प्रतिभागी सूचना पत्रक

1. **अध्ययन शीर्षक**: पोस्ट मास्टक्टोमी रोगियों के बीच गति, मांसपेशियों की ताकत और जीवन की स्वास्थ्य संबंधी गुणवत्ता की सीमा पर व्यापक हस्तक्षेप की प्रभावशीलता।

2. **अध्ययन अन्वेषक:**

3. **छात्र**: अंगिता एम.एससी। नर्सिंग

4. **मार्गदर्शक** (नाम, विभाग): डॉ. जीसा जॉर्ज टी- असिस्टेंट प्रो. कॉलेज ऑफ नर्सिंग एम्स भोपाल

5. **सह-मार्गदर्शक** (नाम, विभाग): श्री कुमारसामी - एपी असिस्टेंट प्रोफेसर कॉलेज ऑफ नर्सिंग एम्स भोपाल

6. **सह-मार्गदर्शक** (नाम, विभाग): डॉ. विनय कुमार- प्रोफेसर और एचओडी सर्जिकल ऑन्कोलॉजी एम्स भोपाल

7. **परिचय:**

हम व्यापक हस्तक्षेप की प्रभावशीलता का मूल्यांकन करने के लिए एक शोध अध्ययन कर रहे हैं जिसमें एम्स भोपाल में पोस्ट मास्टक्टोमी रोगियों के बीच भौतिक चिकित्सा, शैक्षिक रणनीतियों और गति की सीमा, मांसपेशियों की ताकत और जीवन की स्वास्थ्य संबंधी गुणवत्ता पर मल्टीमीडिया निर्देशात्मक पैकेज शामिल है। जैसा कि हमने अध्ययन किया है कि मास्टक्टोमी लिम्फेडेमा, कॉर्डिंग, कंधे की कठोरता जैसे रोगियों में बड़ी जटिलताओं का कारण बन सकती है जो व्यापक प्रभाव से निवारक हो सकती है। हम शोध अध्ययन के अनुनय के लिए संस्थान स्वास्थ्य और नैतिक समिति से अनुमति लेना चाहेंगे। यदि आप स्वेच्छा से भाग लेने के लिए सहमत हैं, तो हम आपसे एक सहमति फॉर्म पर हस्ताक्षर करने के लिए कहेंगे।

8. **अध्ययन का उद्देश्य**:

हमारे अध्ययन का उद्देश्य मास्टेक्टॉमी के बाद के रोगियों में गति की सीमा, मांसपेशियों की ताकत और स्वास्थ्य संबंधी जीवन की गुणवत्ता पर व्यापक हस्तक्षेप की प्रभावशीलता का मूल्यांकन करना है।

9. भाग लेना - इसमें क्या शामिल है:

क्या मुझे भाग लेना है?

इस शोध में भागीदारी पूरी तरह से स्वैच्छिक है। भाग न लेने या किसी भी समय वापस लेने का निर्णय किसी भी तरह से आपके अधिकारों या चिकित्सा देखभाल को प्रभावित नहीं करेगा।

यदि मैं भाग लेता हूँ तो मुझसे क्या अपेक्षा की जाती है?

यदि आप भाग लेते हैं, तो हम व्यापक हस्तक्षेप प्रदान करेंगे जिसमें भौतिक चिकित्सा और शिक्षा रणनीतियाँ भी शामिल हैं, जिसमें प्रतिभागी को दी गई सूचना पुस्तिका और हस्तक्षेप का मूल्यांकन भी अध्ययन का हिस्सा होगा।

अध्ययन में मेरा हिस्सा कितने समय तक चलेगा?

अध्ययन में आपकी भागीदारी संभवतः दूसरे पोस्ट ऑपरेटिव डे से शुरू होकर डिस्चार्ज या पांचवें पोस्ट ऑपरेटिव तक जारी रहेगी और मूल्यांकन ओपीडी में 14वें दिन और चौथे सप्ताह के फॉलोअप दिवस पर किया जाएगा।

क्या मुझे अध्ययन के लिए अतिरिक्त मुलाकातों या अतिरिक्त जांचों के लिए आना होगा?

नहीं

भाग लेने के संभावित लाभ क्या हैं?

भाग लेने से मास्टेक्टॉमी के बाद के अभ्यासों के बारे में ज्ञान प्राप्त करने में मदद मिलेगी और कार्यात्मक रूप से मास्टेक्टोमी के बाद अनुकूलन में भी मदद मिलेगी। यह ज्ञान के शरीर को बेहतर निहितार्थ के लिए मदद करेगा।

भाग लेने के संभावित नुकसान और जोखिम क्या हैं?

प्रतिभागी से एकत्र की गई सभी सूचनाओं को गोपनीय रखा जाएगा, भले ही सुरक्षित डेटा भंडारण और पहुंच सुनिश्चित करने के लिए सभी संभव उपाय किए जाएंगे।

मुझसे एकत्र की गई जानकारी का क्या होता है?

एकत्र की गई सभी सूचनाओं को कड़ाई से गोपनीय रखा जाएगा और किसी के साथ साझा नहीं किया जाएगा। अध्ययन के परिणाम समूह डेटा के रूप में रिपोर्ट किए जाएंगे और किसी भी तरह से आपकी पहचान नहीं करेंगे।

क्या होगा अगर मैं अध्ययन में भाग लेने के बारे में अपना विचार बदल दूं?

आप अपना विचार बदलने और अध्ययन के दौरान किसी भी समय बिना किसी नुकसान या दंड के वापस लेने के हकदार हैं।

अधिक जानकारी के लिए या मेरे और प्रश्न या चिंताएँ होने पर मैं किससे संपर्क करूँ?

यदि आप कोई जानकारी चाहते हैं या आपके कोई प्रश्न या चिंताएँ हैं, तो आप संपर्क कर सकते हैं:

अंगिता
स्नातकोत्तर छात्र,
नर्सिंग विभाग, एम्स, भोपाल
9805893543
angita.mscnursing22@aiimsbhopal.edu.in

डॉ. शशांक पुरवार
सदस्य सचिव,
संस्थान आचार समिति - छात्र अनुसंधान
(7773010099, ihecpgr@aiimsbhopal.edu.in)

ANNEXURE20: PARTICIPANTINFORMEDCONSENTFORM

ParticipantIdentificationNumberforthisStudy:……

TitleofProject:effectivessodcomprehensiveinterventiononrangeofmotion,musclestrengthandhealthrelatedqualityof life among post mastectomy patients.

NameofStudentInvestigator:Ms.Angita
Tel No.(s): 9805993543
NameofThesisGuide:Dr.JisaGeorgeT
The contents of the information sheet that was provided have been read carefully by me/explained in detail to me,in a languagethat Icomprehend,and I have fully understood the contents. I confirm that I have had the opportunity to ask questions. The nature and purpose of the study and its potential risks/benefits and expected duration of the study, and other relevant details of the study have been explained to me in detail. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal right being affected.

I understand that the information collected about me from my participation in this research and sections of any of my medical notes may be looked at by responsible individuals from AIIMS. I give permission for this individual to have access to myrecords.

Ifparticipantsischild,his/herverbalorwrittenassenthasbeenobtained.Iagreetotakepartinthe above study.

_____
(Signature/LeftThumbImpression)

Date…… Place……..... Name ofthe participant…….....
Son/Daughter/Spouseof…….
CompletePostalAddress ..... Ifilliterate.
Theinformationsheethasbeenreadandexplainedtotheparticipantandgiventheopportunitytoaskquestions.Iconfirmthatthe individual has given consent freely.

_____

SignatureofLegallyacceptablerepresentativeorimpartialwitness.Date: Name of LAR or impartial witness:
Address:
Thisistocertifythattheaboveconsenthasbeenobtainedinmypresence.

_____

SignatureofthestudentInvestigatorDate…… Place……

ANNEXURE21: CONTENT OF INTERVENTION PROTOCOL/INFORMATION BOOKLET

HOME CARE AFTER MASTECTOMY

Content

- Introduction
- Instruction for home care after mastectomy
- The Jackson-Pratt (JP) Drain
- Wound Care
- Pain Relief and Other Medicines
- Diet
- Activity
- Rest and sleep
- Psychosocial intervention
- Rehabilitative interventions
- Physical therapy
- When to reach to health care setting

Introduction

A mastectomy is a type of surgery that removes the entire or a part of breast. It's one of several potential treatment options for breast cancer. After the operation patient will return to their normal activities in about 4 weeks or type of mastectomy that you had and your overall health.

You may have shoulder, chest, and arm stiffness. This stiffness gets better over time and can be helped with physical therapy. You may need time to adjust to losing your breast. Talking to other women who have had mastectomies can help you deal with these feelings.

Here are instructions for taking care of yourself after you go home:-

The Jackson-Pratt (JP) Drain

Usually, a gauze bandage will cover the surgical wound and JP drain. The JP drain removes fluid from your wound to help prevent swelling and lower the risk of infection. You are showed how to care for the drain before you leave the hospital. Do not drive or do housework until the drain is out.

Wound Care

If the bandage is dry, leave it in place for 24 hours. If the bandage is moist, you can replace it with a fresh gauze bandage.

How to change the bandage:-

- Wash your hands.
- Remove the old bandage.
- Clean the area where the stitch holds the tube in place with an alcohol wipe.
- Put a new bandage on the wound and tube site. Make the bandage large enough to cover the whole area.
- Tape the bandage in place. Wash your hands again.

Pain Relief and Other Medicines

You will probably have some pain after your surgery. You received a prescription for pain medicine. Follow your doctor's instructions for taking it. Prescription for antibiotics to help prevent infection. Please take all of these pills as directed.

Diet

You can eat anything you want after the surgery. For the first few days, it is best to eat light meals. The surgical team put a tube down your throat during the operation. You may have a sore throat for a few days. Choose foods that are easy to swallow until your throat feels better.

Narcotic pain medicines can cause constipation. Doing these things can help ease it:

- Drink more fluid than usual, Drink 8 to 10 glasses of water
- Eat high-fiber foods such as prunes and bran.

Activity

Narcotic pain medicines can cause constipation, be sure to get out of bed for short walks.

Rest and sleep

For more comfortable sleep, try raising your upper body a little with pillows. You can also put small pillows under your arms. Shirts that open in front are easier to put on and take off.

Psychosocial intervention

Communication with partner or family members and sharing the concerns and fears with them can be very helpful

in maintaining a healthy, happy life after breast cancer. Along with exercise therapy, mindful meditation will also benefit the psychological health. In several research studies it has been shown that mindful meditation bring a emotional, physical and psychological wellness among people.

Steps of practicing mindful meditation:-

Select a location. Think about a place where you will not be interrupted or have distractions. It can be a quiet part of your home or next to a tree outside. Choose a place that feels peaceful and where you can detach from the hum of everyday life.

- **Get comfortable**. Wear comfortable clothing that won't bother you or distract you.

- **Settle your mind**. It may take you a little bit of time to settle in and begin to detach from all the things going on in your life

- **Take some deep breaths**. Bring your awareness to your breath, noticing the inhalations and exhalations of each breath. Feel how each breath flows in and out of your body, filling your lungs and then releasing through your throat and your mouth. Begin to lengthen and deepen each breath. Taking deep breaths helps settle and relax the mind and the body

- **Return to your breath**. Any time you get distracted by noises, thoughts, or anything, go back to observing your inhalations and exhalations

Rehabilitative interventions

In several studies it has been found that exercise, physical activity, yoga and meditation are effective in improving psychological health after mastectomy among patients.

Physical therapy

General instructions

- Wear comfortable, loose clothing when doing the exercises.
- It may be helpful to exercise after a warm shower when muscles are warm and relaxed.
- Do the exercises twice a day until you get back normal flexibility.
- Be sure to take deep breaths, in and out, as do each exercise.
- Person might feel some tightness in your chest and armpit after surgery. This is normal, and the tightness should decrease as you do your exercises.

- Stop exercising and talk to doctor right away if person feels:
- ➢ Get weaker, start losing your balance, or start falling
- ➢ Have pain that gets worse
- ➢ Have new heaviness, aching, tightness, or other strange sensations in your arm
- ➢ Have unusual swelling or swelling that gets worse
- ➢ Have headaches, dizziness, blurred vision, new numbness, or tingling in your arms or chest.

From Post operative day 2 to 5th post operative day

Deep breathing exercises

Lie down on your back and take a slow, deep breath. Breathe in as much air as you can while trying to expand your chest and abdomen (push your belly button away from your spine). Relax and breathe out. Repeat this 4 or 5 times. This exercise will help maintain normal movement of your chest, making it easier for your lungs to work.

Pump it up

Lie on your unaffected side with your affected arm straight out, resting on top of a pillow.
Slowly bend your elbow while making a fist at the same time.
Next, slowly straighten your elbow while opening your fist at the same time.
Repeat this pumping motion 15 to 25 times.

Shoulder shrug and circles

Lift both shoulders up toward your ears. Keep your chin tucked in slightly.
Gently rotate both shoulders forward, and then slowly down and back, making a circle.
Make 5 slow circles in one direction, then switch and make 5 slow circles in the opposite direction.

Arm lifts

Clasp your hands together in front of your chest. Point your elbows out.

Slowly lift your arms upwards until you feel a gentle stretch, but no pain.

Hold for 5 to 10 seconds (or 5 deep breaths) and then slowly return to the start position.

Repeat 5 to 10 times.

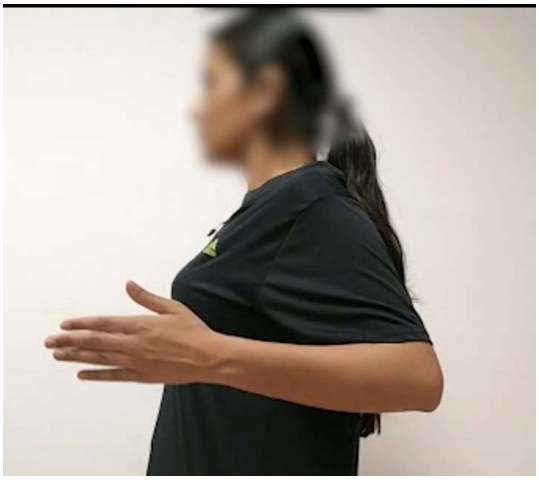
Shoulder blade squeeze

Hold your arms at your side against your body with your elbows bent.

Slowly bring your elbows straight backwards, while squeezing your shoulder blades together to feel a gentle stretch.

Hold this position for 5 to 10 seconds (or 5 deep breaths) and then slowly return to the start position.

Repeat 5 to 10 times.

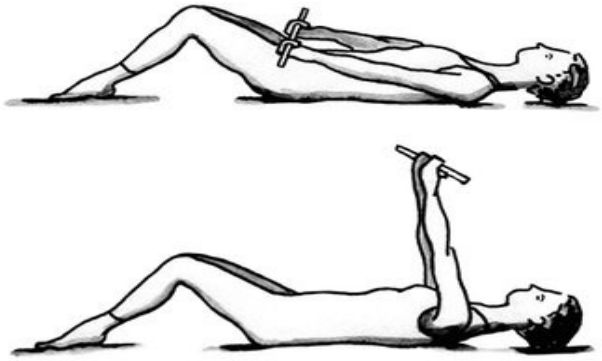


Pendulum exercises

From one week to 4 weeks (or once the drain will removed)

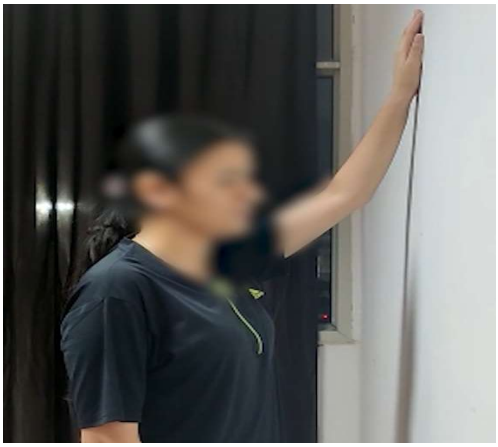
Wand exercises

- Lie on your back with your knees bent. Hold the wand with both hands. Your hands should be as wide apart as your shoulders.
- Lift the wand over your head as far as you can until you feel a gentle stretch, but no pain. Your unaffected arm will help lift the wand higher.
- Hold for 20 to 30 seconds, and remember to breathe. If you find this stretch is too painful, lower your arms slightly, but continue to hold. Then, gently lower arms to the start position.
- Repeat 5 to 10 times.



Wall climbing(side wall and front wall)

- Stand facing the wall.
- Place the palm of your hand (of your affected arm) flat against the wall.
- Slowly slide your hand up the wall as high as you can go until you feel a stretch, but no pain. Make sure the movement is only coming from your shoulder and you are not bending at your back to get higher up the wall.
- Hold for 20 to 30 seconds and remember to breathe. If you find the stretch is too painful, lower your arm slightly, but continue to hold.
- Slowly slide your hand down the wall to the start position.

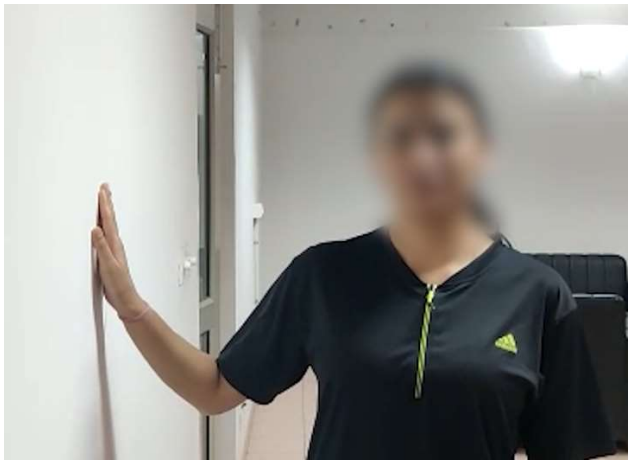


Side wall stretch

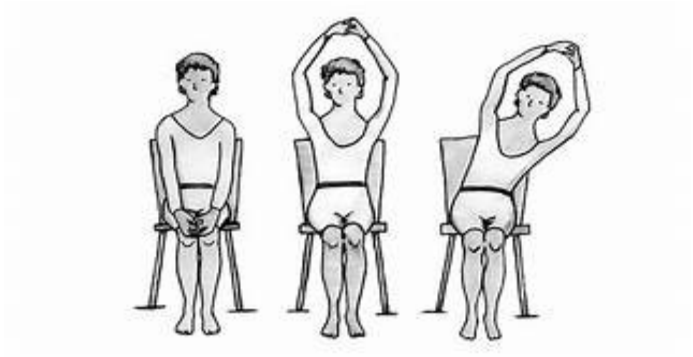
- Stand with your affected side to the wall.
- Place the palm of your hand flat against the wall at shoulder height.
- Slowly slide your hand up the wall as high as you can go until you feel a stretch but no pain. Do not rotate

your body toward the wall, even if it means you can't go up as high.

- Hold for 20 to 30 seconds and remember to breathe. If you find the stretch too painful, lower your arm slightly, but continue to hold.
- Slowly slide hand down the wall to return to the start position.
- Do a couple of shoulder rolls to reset, then repeat 3 to 5 times.



Side bends



From 4 weeks onwards

Regular aerobic exercises.

When to reach to health care setting

General

- Vomiting
- Fever over 100.3° F

Wound

- Wound seems not to be healing

- Redness, swelling, or warmth around the wound or tube
- Stitches come loose

Drain Tube

- Tube falls out
- Fluid leaks around tube
- New or more pain around tube

Drainage

- Foul-smelling fluid
- Fluid change from light pink to dark red
- Sudden increase or decrease in the amount of fluid

Source

The booklet exercises after breast surgery, Canadian cancer society, 2015.

How to recover after a mastectomy [Internet]. Verywell Health. [cited 2023 Apr 11]. Available from: https://www.verywellhealth.com/post-mastectomy-care-6823753

Brunner's and Sudharth's Textbook of medical surgical nursing 13th edition published by Wolters Kluwer(India) Pvt Ltd,New Delhi 2014

ANNEXURE 22:- INTERVENTION PROTOCOL (IN HINDI)

- अनुक्रमणिका

- परिचय
- मास्टेक्टॉमी के बाद घर की देखभाल के लिए निर्देश
- जैक्सन-प्रैट (जेपी) नाली
- घाव की देखभाल
- दर्द से राहत और अन्य दवाएं
- आहार
- गतिविधि
- आराम करें और सोएं
- मनोसामाजिक हस्तक्षेप
- पुनर्वास हस्तक्षेप
- भौतिक चिकित्सा
- स्वास्थ्य देखभाल सेटिंग तक कब पहुंचें

परिचय

मास्टेक्टॉमी एक प्रकार की सर्जरी है जो स्तन को हटा देती है। यह स्तन कैंसर के लिए कई संभावित उपचार विकल्पों में से एक है। ऑपरेशन के बाद रोगी लगभग 4 सप्ताह या मास्टेक्टॉमी के प्रकार में अपनी सामान्य गतिविधियों पर वापस आ जाएगा आपका समग्र स्वास्थ्य।

आपको कंधे, छाती और हाथ में अकड़न हो सकती है। यह कठोरता समय के साथ बेहतर हो जाती है और इसे भौतिक चिकित्सा की मदद से प्रबंधित किया जा सकता है। आपको सर्जरी के बाद समायोजित करने के लिए समय की आवश्यकता हो सकती अन्य महिलाओं से बात करना जिनकी ये सर्जरी हुई है, आपको इन भावनाओं से निपटने में मदद कर सकते हैं।

घर जाने के बाद खुद की देखभाल करने के निर्देश यहां दिए गए हैं: –

जैक्सन-प्रैट (जेपी) नाली

आमतौर पर, एक धुंध पट्टी सर्जिकल घाव और जेपी नाली को कवर करेगी। जेपी नाली सूजन को रोकने और संक्रमण के जोखिम को कम करने में मदद करने के लिए आपके घाव से तरल पदार्थ निकालती है । आपको दिखाया जाता है कि अस्पताल छोड़ने से पहले नाली की देखभाल कैसे करें। जब तक नाली बाहर न हो जाए तब तक वाहन न चलाएं और न ही घर का काम करें।

घाव की देखभाल

यदि पट्टी सूखी है , तो इसे 24 घंटे के लिए छोड़ दें । यदि पट्टी नम है, तो आप इसे एक ताजा धुंध पट्टी के साथ बदल सकते हैं।

पट्टी कैसे बदलें:-

1. अपने हाथों को धो लें ।
2. पुरानी पट्टी हटा दें ।
3. उस क्षेत्र को साफ करें जहां सिलाई अल्कोहल वाइप के साथ ट्यूब रखती है।
4. घाव और ट्यूब साइट पर एक नई पट्टी लगाएं। पट्टी को पूरे क्षेत्र को कवर करने के लिए पर्याप्त बड़ा बनाएं।
5. पट्टी को जगह में टेप करें। अपने हाथों को फिर से धो लें ।

दर्द से राहत और अन्य दवाएं
आपको शायद आपकी सर्जरी के बाद कुछ दर्द होगा। आपको दर्द से राहत के लिए दवा दी जाएगी, लेने के लिए डॉक्टर के निर्देशों का पालन करें , और संक्रमण की रोकथाम के लिए एंटीबायोटिक भी। कृपया इन सभी गोलियों को निर्देशानुसार लें।

आहार
आप सर्जरी के बाद कुछ भी खा सकते हैं। पहले कुछ दिनों के लिए , हल्का भोजन खाना सबसे अच्छा है । सर्जिकल टीम ने ऑपरेशन के दौरान आपके गले के नीचे एक ट्यूब डाली। आपको कुछ दिनों के लिए गले में खराश हो सकती है। ऐसे खाद्य पदार्थ चुनें जो निगलने में आसान हों जब तक कि आपका गला बेहतर महसूस न हो ।
नारकोटिक दर्द की दवाएं कब्ज का कारण बन सकती हैं। इन चीजों को करने से इसे कम करने में मदद मिल सकती है:

- सामान्य से अधिक तरल पदार्थ पीएं , 8 से 10 गिलास पानी पिएं
- उच्च फाइबर वाले खाद्य पदार्थ जैसे प्रून और चोकर खाएं ।

गतिविधि
नारकोटिक दर्द की दवाएं कब्ज का कारण बन सकती हैं, छोटी सैर के लिए बिस्तर से बाहर निकलना सुनिश्चित करें ।
आराम करें और सोएं
अधिक आरामदायक नींद के लिए, अपने ऊपरी शरीर को तकिए से थोड़ा ऊपर उठाने की कोशिश करें । आप अपनी बाहों के नीचे छोटे तकिए भी रख सकते हैं। सामने खुलने वाली शर्ट को पहनना मददगार होगा।

मनोसामाजिक हस्तक्षेप
साथी या परिवार के सदस्यों के साथ संचार और उनके साथ चिंताओं और भय को साझा करना स्तन कैंसर के बाद एक स्वस्थ, खुशहाल जीवन बनाए रखने में बहुत सहायक हो सकता है। व्यायाम चिकित्सा के साथ-साथ माइंडफुल मेडिटेशन से मनोवैज्ञानिक स्वास्थ्य को भी फायदा होगा। कई शोध अध्ययनों में यह दिखाया गया है कि माइंडफुल मेडिटेशन लोगों में भावनात्मक, शारीरिक और मनोवैज्ञानिक कल्याण लाता है

माइंडफुल मेडिटेशन के अभ्यास के चरण:-
1. एक स्थान का चयन करें। ऐसी जगह के बारे में सोचें जहां आप बाधित नहीं होंगे या विचलित नहीं होंगे। यह आपके घर का एक शांत हिस्सा या बाहर एक पेड़ के बगल में हो सकता है। ऐसी जगह चुनें जो शांतिपूर्ण महसूस करे और जहाँ आप रोज़मर्रा की ज़िंदगी से अलग हो सकें।
2. सहज हो जाओ। आरामदायक कपड़े पहनें जो आपको परेशान न करें या आपका ध्यान भंग न करें।
3 . अपने मन को स्थिर करें। आपको व्यवस्थित होने और अपने जीवन में चल रही सभी चीजों से अलग होने में थोड़ा समय लग सकता है।
4. कुछ गहरी सांसें लें। प्रत्येक सांस के लेने और छोड़ने पर ध्यान देते हुए, अपनी सांस के प्रति अपनी जागरूकता लाएँ। महसूस करें कि प्रत्येक सांस आपके शरीर के अंदर और बाहर कैसे बहती है, आपके फेफड़ों को भरती है और फिर आपके गले और आपके मुंह से निकलती है। प्रत्येक सांस को लंबा और गहरा करना शुरू करें। गहरी सांसें लेने से मन और शरीर को व्यवस्थित और आराम करने में मदद मिलती है
5 . अपनी सांस पर लौटें। जब भी आप शोर, विचारों या किसी भी चीज़ से विचलित हो जाते हैं, तो अपनी साँस लेने और छोड़ने पर ध्यान दें।

पुनर्वास हस्तक्षेप
कई अध्ययनों में यह पाया गया है कि व्यायाम, शारीरिक गतिविधि, योग और ध्यान रोगियों के बीच मास्टेक्टॉमी के बाद

मनोवैज्ञानिक स्वास्थ्य में सुधार करने में प्रभावी हैं।

भौतिक चिकित्सा
सामान्य निर्देश

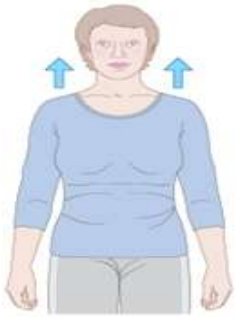
- व्यायाम करते समय आरामदायक, ढीले कपड़े पहनें।
- गर्म स्नान के बाद व्यायाम करना सहायक हो सकता है जब मांसपेशियां गर्म और आराम से होती हैं।
- व्यायाम दिन में दो बार करें जब तक कि आप सामान्य लचीलापन वापस न पा लें।
- प्रत्येक व्यायाम की तरह, अंदर और बाहर गहरी सांस लेना सुनिश्चित करें।
- सर्जरी के बाद व्यक्ति को आपकी छाती और बगल में कुछ जकड़न महसूस हो सकती है। यह सामान्य है, और जैसे ही आप अपने व्यायाम करते हैं, जकड़न कम हो जानी चाहिए।
- व्यायाम करना बंद करें और तुरंत डॉक्टर से बात करें यदि व्यक्ति महसूस करता है:
- कमजोर हो जाओ, अपना संतुलन खोना शुरू करो, या गिरना शुरू करो
- दर्द है जो बदतर हो जाता है
- आपकी बांह में नया भारीपन, दर्द, जकड़न या अन्य अजीब संवेदनाएं हैं
- असामान्य सूजन या सूजन है जो बदतर हो जाती है
- सिर दर्द, चक्कर आना, धुंधली दृष्टि, नई सुन्नता, या आपकी बाहों या छाती में झुनझुनी
- पोस्ट ऑपरेटिव दिवस 2 से 5वें पोस्ट ऑपरेटिव डे तक

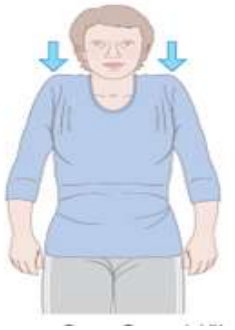
गहरी सांस लेने के व्यायाम
अपनी पीठ के बल लेट जाएं और धीमी, गहरी सांस लें। अपनी छाती और पेट का विस्तार करने की कोशिश करते समय जितना संभव हो उतना हवा में सांस लें (अपने पेट बटन को अपनी रीढ़ से दूर धकेलें)। आराम करो और सांस छोड़ो। इसे 4 या 5 बार दोहराएं। यह व्यायाम आपकी छाती के सामान्य आंदोलन को बनाए रखने में मदद करेगा, जिससे आपके फेफड़ों को काम करना आसान हो जाएगा।

Pump it up
अपने प्रभावित हाथ को सीधे बाहर निकालकर अप्रभावित पक्ष पर लेट जाएं, एक तकिए के ऊपर आराम करें।
एक ही समय में मुट्ठी बनाते समय धीरे-धीरे अपनी कोहनी को मोड़ें।
इसके बाद, एक ही समय में अपनी मुट्ठी खोलते हुए धीरे-धीरे अपनी कोहनी को सीधा करें।
इस पंपिंग गति को 15 से 25 बार दोहराएं।

कंधे की झेंप और घेरे
दोनों कंधों को अपने कानों की ओर उठाएं। अपनी ठोड़ी को थोड़ा सा अंदर रखें।
धीरे से दोनों कंधों को आगे की ओर घुमाएं, और फिर धीरे-धीरे नीचे और पीछे, एक सर्कल बनाएं।

एक दिशा में 5 धीमे घेरे बनाएं, फिर **स्विच** करें और विपरीत दिशा में 5 धीमे सर्कल बनाएं।



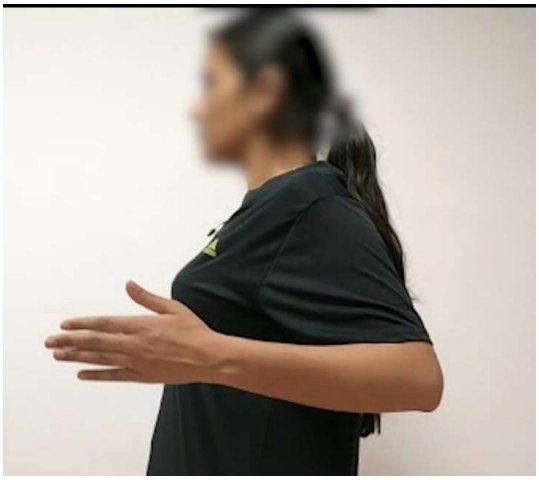


हाथ लिफ्ट

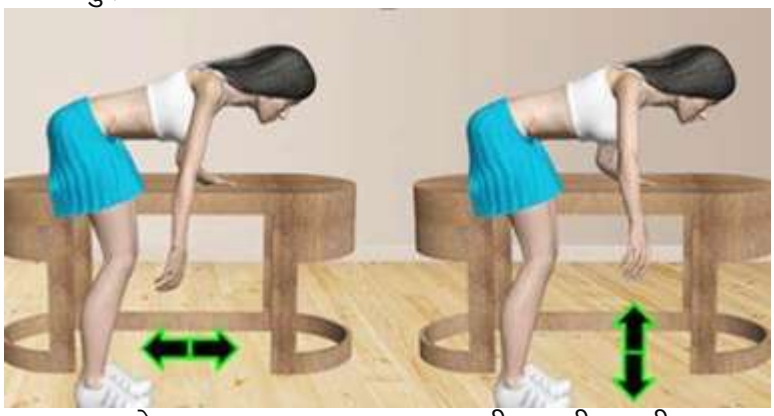
अपने हाथों को अपनी छाती के सामने एक साथ पकड़ें। अपनी कोहनी को बाहर निकालें।
धीरे-धीरे अपनी बाहों को ऊपर की ओर उठाएं जब तक कि आप एक कोमल खिंचाव महसूस न **करें**, लेकिन कोई दर्द न हो।
5 से 10 सेकंड (या 5 गहरी सांस) के लिए पकड़ो और फिर धीरे-धीरे शुरुआती स्थिति में लौटें।
5 से 10 बार दोहराएं।

कंधे के ब्लेड निचोड़ना

अपनी बाहों को अपने शरीर के **खिलाफ** अपनी बांहों पर रखें और अपनी कोहनी को मोड़ें।
धीरे-धीरे अपनी कोहनी को सीधे पीछे की ओर लाएं, जबकि एक कोमल खिंचाव महसूस करने के लिए अपने कंधे के ब्लेड को एक साथ निचोड़ें।
Ø इस स्थिति को 5 से 10 सेकंड (या 5 गहरी सांस) तक पकड़ें और फिर धीरे-धीरे शुरुआती **स्थिति** में लौट आएं।
5 से 10 बार दोहराएं।



पेंडुलम व्यायाम



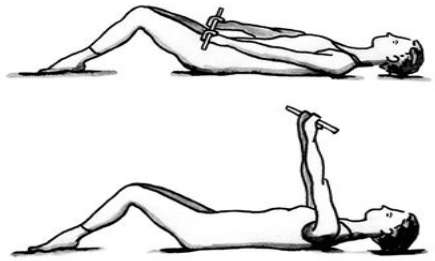
एक सप्ताह से 4 सप्ताह तक (या एक बार नाली हटा दी जाएगी)

वंड व्यायाम

घुटनों को मोड़कर पीठ के बल लेट जाएं। दोनों हाथों से छड़ी पकड़ो। आपके हाथ आपके कंधों की तरह चौड़े होने चाहिए। अपने सिर पर छड़ी को तब तक उठाएं जब तक आप एक कोमल खिंचाव महसूस न करें, लेकिन कोई दर्द न हो। आपका अप्रभावित हाथ छड़ी को ऊंचा उठाने में मदद करेगा।

20 से 30 सेकंड के लिए पकड़ो, और सांस लेना याद रखें। यदि आपको लगता है कि यह खिंचाव बहुत दर्दनाक है, तो अपनी बाहों को थोड़ा कम करें, लेकिन पकड़ना जारी रखें। फिर, धीरे से बाहों को शुरुआती स्थिति में कम करें।

5 से 10 बार दोहराएं।



दीवार पर चढ़ना (साइड की दीवार और सामने की दीवार)

दीवार की ओर मुंह करके खड़े हो जाओ।

अपने हाथ की हथेली (अपने प्रभावित हाथ की) को दीवार के खिलाफ सपाट रखें।

धीरे-धीरे अपने हाथ को दीवार पर ऊपर उठाएं जितना आप जा सकते हैं जब तक कि आपको **खिंचाव** महसूस न हो, लेकिन कोई दर्द न हो। सुनिश्चित करें कि आंदोलन केवल आपके कंधे से आ रहा है और आप दीवार पर चढ़ने के लिए अपनी पीठ पर नहीं झुक रहे हैं।

20 से 30 सेकंड के लिए पकड़ो और सांस लेना याद रखें। यदि आपको लगता है कि खिंचाव **बहुत** दर्दनाक है, तो अपनी बांह को थोड़ा कम करें, लेकिन पकड़ना जारी रखें।

धीरे-धीरे अपने हाथ को दीवार से नीचे **स्टार्ट** पोजीशन में स्लाइड करें।

साइड की दीवार का विस्तार

दीवार पर अपने प्रभावित पक्ष के साथ खड़े हों।

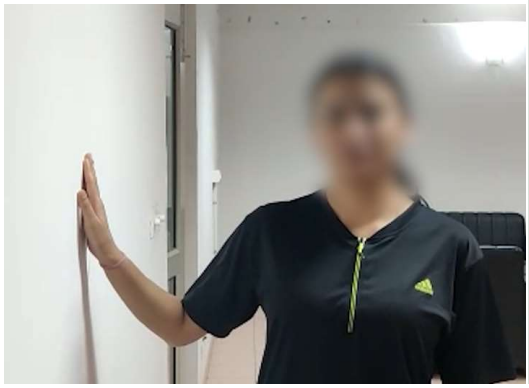
अपने हाथ की हथेली को कंधे की ऊंचाई पर दीवार के खिलाफ सपाट रखें।

धीरे-धीरे अपने हाथ को दीवार पर ऊपर ले जाएं जितना आप जा सकते हैं जब तक कि आपको **खिंचाव** महसूस न हो लेकिन कोई दर्द न हो। अपने शरीर को दीवार की ओर न घुमाएं, भले ही इसका मतलब है कि आप उतनी ऊंचाई पर नहीं जा सकते।

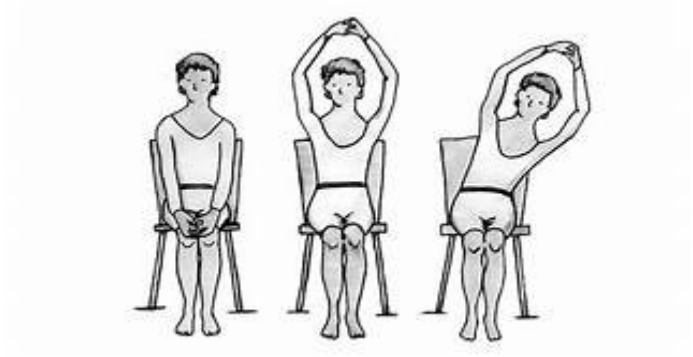
20 से 30 सेकंड के लिए पकड़ो और सांस लेना याद रखें। यदि आपको खिंचाव बहुत दर्दनाक लगता है, तो अपनी बांह को थोड़ा कम करें, लेकिन पकड़ना जारी **रखें।**

प्रारंभ स्थिति में लौटने के लिए धीरे-धीरे हाथ को दीवार के नीचे स्लाइड करें।

रीसेट करने के लिए कंधे के रोल के एक जोड़े को करें, फिर 3 से 5 बार दोहराएं।



साइड मोड़



4 सप्ताह के बाद से

- नियमित एरोबिक व्यायाम।

स्वास्थ्य देखभाल सेटिंग तक कब **पहुंचें**

सामान्य

- उल्टी
- बुखार 100.3 डिग्री फ़ारेनहाइट से अधिक
- घाव
- घाव ठीक नहीं हो रहा है
- घाव या ट्यूब के आसपास लालिमा, सूजन या गर्मी
- टांके ढीले पड़ जाते हैं
- नाली ट्यूब
- ट्यूब गिर जाती है
- ट्यूब के चारों ओर तरल **पदार्थ** लीक होता है
- ट्यूब के आसपास नया या अधिक दर्द
- अपवहन-क्षेत्र
- दुर्गंधयुक्त तरल पदार्थ
- द्रव हल्के गुलाबी से गहरे लाल रंग में बदल जाता है
- तरल पदार्थ की मात्रा में अचानक वृद्धि या कमी

ANNEXURE22: Certificate of Muscle strength Examination

udemy

Certificate no: UC-05650d13-ab98-43d1-a803-295fa5f4c226
Certificate url: ude.my/UC-05650d13-ab98-43d1-a803-295fa5f4c226
Reference Number: 0004

CERTIFICATE OF COMPLETION

Physical Therapy - Muscle Strength Examination, Stretching

Instructors **Klejda Tani**

Angita

ANNEXURE23: Certificate on Rehabilitaion after Breast Cancer

udemy

Certificate no: UC-4404ebb7-3f9b-4b34-b499-cb87e8c6e811
Certificate url: ude.my/UC-4404ebb7-3f9b-4b34-b499-cb87e8c6e811
Reference Number: 0004

CERTIFICATE OF COMPLETION

Recovery to Function: A Guide to Rehab After Breast Cancer

Instructors **Bettina Brown**

Angita

Date **June 21, 2023**

Link to open a video on post mastectomy Exercises
https://youtu.be/NP04OpM14es?si=08djqgOqPqSgh9YO

PROVIDINGAVOICEFORPATIENTSWORLDWIDE

ANNEXURE25:TOOLPERMISSIONFUNCTIONALASSESSMENTOF CHRONICILLNESSTHERAPY(FACIT) LICENSING AGREEMENT

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Name("Licensee"):AngitaThakur

Measurement:FACT-G Language(s):

English, Hindi

StudyTitle("Study"):astudytoevaluatetheeffectivenessofcomprehensivenurseledinterventiononpain,rangeofmotionandqualityoflifeamongpostmastectomypatientsatAiimsbhopal,india

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Signature: Angita(Dec 2022216:11GMT+5.5)

Email: angitathakur972@gmail.com

pt. code	group	age	age_category	mar_stat	edu_stat	occupation	family type
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6	1	47	2	1	2	0	0
7	1	51	3	1	3	0	1
8	1	62	3	2	3	0	1
9	2	42	2	1	5	3	0
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16	2	36	1	1	3	0	1
17	2	46	2	1	2	0	1
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34	1	51	3	1	6	0	1
35	1	44	2	1	6	6	1
36	1	69	3	1	2	0	1
37	1	60	3	1	2	0	1
38	2	43	2	1	5	2	1
39	2	46	2	1	5	0	1
40	2	57	3	1	2	0	0

comorbid illness	CO_HTN	CO_DM	CO_ASTHMA	CO_TB	CO_THYROID	CO_OTHER	period of illness
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0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
1	0	0	1	0	1	0	1
0	0	0	0	0	0	0	2
1	1	0	0	0	0	0	0
1	1	1	0	0	0	0	1
0	0	0	0	0	0	0	1
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0	0	0	0	0	0	0	2
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0	0	0	0	0	0	0	1
1	1	0	0	0	0	0	0
1	1	0	0	0	0	0	1
1	1	1	0	0	0	0	0

BMI	mastectomy_type	adjuvant therapy	pre ROM 1_2nd day	pre ROM 2_2nd day
1	0	0	0	1
1	0	1	0	1
1	0	0	0	0
1	0	0	0	1
2	1	1	0	0
0	0	0	0	1
1	0	1	0	1
2	0	1	0	0
1	0	0	0	1
1	0	0	0	0
1	0	0	0	1
3	0	0	0	1
1	0	1	0	1
3	0	0	0	1
1	1	0	0	1
1	1	0	0	0
2	0	0	0	0
1	0	0	0	0
1	1	0	0	0
2	1	0	0	0
2	0	1	0	1
3	0	1	0	0
1	0	1	0	0
1	0	1	1	0
2	0	0	0	1
0	0	0	0	0
2	1	0	0	0
1	0	0	0	1
3	0	0	0	1
3	0	0	0	0
2	0	1	0	0
1	0	0	0	0
2	0	0	0	0
3	1	0	0	0
2	0	1	0	0
2	0	1	0	0
2	0	1	0	0
2	0	1	0	0
3	0	1	0	0
2	0	0	0	0

pre ROM 3_2nd day	pre ROM 4_2nd day	pre ROM 5_2nd day	pre ROM 6_2nd day
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

pre ROM total 2nd day	pre MS_2nd day	pre PWB_2nd day	pre SWB_2nd day
1	3	17	18
1	3	12	16
0	3	15	18
1	3	21	16
0	3	12	19
1	3	19	11
1	3	17	16
0	3	18	22
1	3	22	15
0	3	13	14
1	3	19	14
1	3	21	15
1	3	20	17
1	3	21	15
1	3	21	18
0	3	19	15
0	3	20	15
0	3	20	16
0	3	20	19
0	3	19	17
1	3	21	16
0	3	20	18
0	3	13	14
1	3	19	17
1	3	15	21
0	3	18	12
0	3	17	17
1	3	20	20
1	3	8	17
0	3	18	19
0	3	16	14
0	3	21	12
0	3	18	16
0	3	19	12
0	3	20	16
0	3	11	16
0	3	17	15
0	3	18	11
0	3	27	12
0	3	19	14

pre EWB_2nd day	pre FWB_2nd day	pre BCS_2nd day	pre TOTAL_2nd day
22	16	33	106
18	11	23	80
20	17	27	97
21	16	33	107
20	12	28	91
14	16	24	84
20	14	27	94
21	14	27	102
19	12	36	104
16	9	31	83
20	12	32	97
19	14	31	100
19	14	30	100
21	13	25	95
21	12	32	104
17	14	32	97
20	14	28	97
21	13	27	97
22	14	27	102
20	13	31	100
22	10	25	94
20	13	27	98
18	14	28	87
17	10	28	91
21	23	32	108
14	17	29	90
20	19	30	93
18	23	33	114
19	16	22	82
19	13	23	117
17	10	24	81
18	11	32	94
20	9	33	96
18	12	28	89
20	10	27	83
17	10	24	78
17	11	25	85
23	14	30	96
20	12	23	94
19	12	28	82

post ROM 1_5nd day	post ROM 2_5nd day	post ROM 3_5nd day	post ROM 4_5nd day
0	1	0	0
0	1	0	0
0	1	0	0
1	1	0	0
0	1	0	0
1	1	0	0
0	1	0	0
0	1	0	0
0	1	0	0
1	0	0	0
1	1	0	0
0	1	0	0
0	1	0	0
1	1	0	0
1	1	0	0
0	1	0	0
0	1	0	0
0	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	0	0	0
1	1	0	0
1	1	0	0
0	1	1	0
1	1	0	0
1	1	0	0
1	1	0	0
0	1	0	0
0	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	0	0	0
1	1	0	0
0	1	0	0

post ROM 5_5nd day	post ROM 6_5nd day	post ROM total _5nd day	post MS _5th day
1	0	2	4
1	1	3	4
1	1	3	4
0	1	3	4
1	0	2	4
1	0	3	4
1	0	2	4
1	0	2	4
0	0	1	4
0	0	1	4
1	0	3	3
0	0	1	4
0	0	1	4
0	0	2	4
0	0	2	4
0	0	1	3
1	0	2	3
0	0	1	3
1	1	4	4
1	0	3	4
1	1	4	4
0	0	2	4
0	0	1	4
0	0	2	4
0	0	2	4
0	0	2	4
0	0	2	4
0	0	2	4
0	0	1	4
0	0	1	4
0	0	2	4
1	1	4	5
1	1	4	4
1	0	3	4
0	0	2	4
0	0	2	4
0	0	1	3
0	0	2	3
0	0	1	3

post ROM 1_14th day	post ROM 2_14th day	post ROM 3_14th day	post ROM 4_14th day
1	1	0	0
1	1	0	1
1	1	0	0
1	1	0	1
1	1	0	0
1	1	0	1
1	1	0	1
1	1	0	1
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	1	1
1	1	1	1
1	1	1	1
1	1	1	1
1	1	0	0
1	1	0	0
1	**1**	**0**	**0**
1	**1**	**1**	**0**
1	**1**	**0**	**1**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**1**	**1**
1	**1**	**1**	**1**
1	**1**	**1**	**1**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**

post ROM 5_14th day	post ROM 6_14th day	post ROM total_14th day	post MS_14 thday
1	1	4	4
1	1	5	5
1	1	4	5
1	1	5	5
1	1	4	4
1	1	5	5
1	1	5	5
1	1	5	5
1	0	3	5
1	1	4	4
1	1	4	4
1	0	3	4
0	0	2	4
1	1	4	5
1	1	4	4
0	0	2	4
1	0	3	4
1	0	3	4
1	1	6	5
1	1	6	4
1	1	6	5
1	1	6	5
0	0	4	4
0	0	4	5
1	1	4	5
1	1	5	5
1	1	5	5
0	0	2	5
0	0	2	4
0	0	2	4
1	1	4	4
1	0	3	4
1	1	6	5
1	1	6	5
1	1	6	5
1	0	3	4
1	1	4	5
0	0	2	4
0	0	2	4
0	0	2	4

post ROM 1_30th day	post ROM 2_30th day	post ROM 3_30th day	post ROM 4_30th day
1	1	1	1
1	1	1	1
1	1	1	1
1	1	1	1
1	1	0	1
1	1	1	1
1	1	1	1
1	1	1	1
1	1	0	0
1	1	0	0
1	1	0	1
1	1	0	1
1	1	0	0
1	1	0	1
1	1	0	1
1	1	0	1
1	1	0	0
1	1	0	1
1	1	1	1
1	1	1	1
1	1	1	1
1	1	1	1
1	1	0	0
1	1	0	0
1	**1**	**1**	**1**
1	**1**	**1**	**1**
1	**1**	**1**	**1**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**1**	**1**
1	**1**	**1**	**1**
1	**1**	**1**	**1**
1	**1**	**1**	**1**
1	**1**	**0**	**0**
1	**1**	**0**	**0**
1	**1**	**0**	**0**

post ROM 5_30th day	post ROM 6_30th day	post ROM total _30th day	post MS_30th day
1	1	6	5
1	1	6	5
1	1	6	5
1	1	6	5
1	1	5	5
1	1	6	5
1	1	6	5
1	1	6	5
1	1	4	5
1	1	4	5
1	1	5	5
1	1	5	5
1	1	4	5
1	1	5	5
1	1	5	5
1	1	5	5
1	1	4	4
1	1	5	5
1	1	6	5
1	1	6	5
1	1	6	5
1	1	6	5
1	0	3	5
1	1	4	5
1	1	6	5
1	1	6	5
1	1	6	5
1	0	3	5
1	1	2	4
0	0	2	4
1	0	3	5
1	1	4	5
1	1	6	5
1	1	6	5
1	1	6	5
1	1	6	5
1	1	6	5
1	0	3	5
0	1	3	5
1	1	4	5

post PWB_30th day	post SWB_30th day	post EWB_30th day	post FWB_30th day	post BCS_30th day
21	17	20	17	34
19	19	19	16	26
21	21	25	18	28
22	18	21	15	32
18	21	21	15	28
20	16	18	17	31
20	17	20	15	26
20	21	21	15	31
20	15	18	11	30
13	14	16	6	31
17	14	19	13	31
20	15	19	14	30
21	18	19	14	28
19	16	21	16	28
19	18	21	15	33
19	15	16	14	31
19	15	22	14	28
20	17	21	12	31
21	18	22	16	28
20	19	21	14	30
23	16	21	14	27
20	18	20	13	27
13	14	16	11	28
17	17	16	11	26
13	23	19	16	26
24	21	21	18	34
22	21	22	18	33
14	20	15	16	29
11	17	13	13	21
9	19	15	10	23
14	14	16	8	20
19	12	18	11	31
21	16	20	12	33
21	14	20	15	31
21	16	21	21	28
13	16	14	10	24
19	14	18	14	20
16	11	16	10	27
14	14	20	12	22
18	14	16	12	28

post TOTAL 30th day
109
99
113
108
103
102
98
108
94
80
94
98
100
100
106
95
98
101
105
104
101
98
82
86
94
118
116
94
74
76
72
91
102
100
107
77
85
80
87
88